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ABSTRACT

Preschool programs can and should be designed to incorporate comprehensive health and physical education. This monograph presents information which is useful to adults interested in increasing their knowledge of health, movement, and physical education as these areas relate to young children. The publication is organized into 14 chapters as follows: (1) "Young Children: An Introduction" (C. J. Smith); (2) "Early Childhood Education: The National Scene" (M. Hanson); (3) "Movement and Motor Development in Early Childhood" (D. Hester); (4) "Physical Activity of Young Children in Relation to Physical and Mental Health" (H. Taras); (5) "Dance in Early Childhood Education" (S. Stinson and Others); (6) "Educating Young Children about Health" (D. Macrina); (7) "The Impact of Public Law 99-457 on Health, Physical Education, Recreation, and Dance" (J. Aldridge); (8) "Preschool Children with Developmental Delays/Disabilities: Individual Differences and Integration" (C. Sherrill); (9) "Motoric and Fitness Assessment of Young Children" (C. Branta); (10) "Health Assessment and Intervention Techniques for 3-, 4-, and 5-Year-Old Children" (V. Hertel); (11) "Health Promotion through Parent Involvement in Early Childhood Education" (M. Kostelnik); (12) "Health and Safety Education for Caregivers" (L. Hofer); (13) "Playground Management and Safety" (L. Bowers); and (14) "Injury Prevention in the Child Care Setting" (A. Chang). Lists of figures and tables complete the document, and references are appended to chapters. (LL)

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YOUNG CHILDREN ON THE GROW:

Health, Activity, and Education in the Preschool Setting

Charlotte M. Hendricks, H.S.D.,

Editor

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Contents

List of Figures vii
List of Tables ix
Preface xi

Current Status of Preschool Programs

I. **Young Children: An Introduction** **3**
Connie Jo Smith
References 7
II. **Early Childhood Education: The National Scene** **9**
Margie R. Hanson
Introduction 9
Causes/Concerns 9
The World Scene 10
National Initiatives 10
Summary of National Association Recommendations 11
Controversy: Curriculum and Methods for Ages 3 to 5 ... 12
Implications for Health Education, Physical Education, Recreation, and Dance 13
Challenges to the Profession 13
References 14
Resources and Organizations 15

Values of Health, Activity, and Movement Education

III. **Movement and Motor Development in Early Childhood** **21**
Donna Hester
Introduction 21
Principles of Development 21
Physical Growth and Development 23
Elements of Early Childhood Physical Education Programs 23
Activity and Equipment Selection 28
Summary 30
References 30
Resources and Movement Programs 31
IV. **Physical Activity of Young Children in Relation to Physical and Mental Health** **33**
Howard L. Taras
Introduction 33
Importance of Physical Fitness for Preschoolers 33

Preschool Physical Activity Program: Preparing the Child for Physical Exertion 34
The Role of Structure and Competition in the Preschool Physical Education Program 36
Aggression: Is It Ever Alright? 38
References 39
Resources 41

V. **Dance in Early Childhood Education** **43**
Susan W. Stinson, with Teresa Benzwie, Roberta Pasternak, Rae Pica, and Elsa Posey
Introduction 43
Creative Dance 46
Movement Elements Used in Creative Dance 48
Methodology 50
Summary 53
References 53
Resources 54

VI. **Educating Young Children About Health** **57**
David M. Macrina
Introduction 57
Why Preschool Health Education Is Important 57
Content of Preschool Health Education 58
Choosing a Preschool Health Education Curriculum 61
Summary 65
References 65

Individual Differences

VII. **The Impact of Public Law 99-457 on Health, Physical Education, Recreation, and Dance** **71**
Jerry Aldridge
Introduction 71
How This Affects the Preschool Age Population 73
General Challenges of Public Law 99-457 74
Challenges Specific to HPRD 74
Summary 75
References 76
Resources 76

VIII. **Preschool Children with Developmental Delays/Disabilities: Individual Differences and Integration** **77**
Claudine Sherrill
Introduction 77
Diagnostic Terms 77
Teacher Attitudes Toward Individual Differences 79
Instructional Environments 79
Psychosocial Development of Preschoolers in Relation to Disabilities/Differences 80

Spontaneous Play: A Common Deficit 83
Motor Skill Problems 83
The Language-Arts-Movement Programming (LAMP) Model 84
References 86

IX. Motoric and Fitness Assessment of Young Children 89
Crystal F. Branta
Introduction 89
Assessment and Evaluation 90
Techniques of Assessing Children 101
Summary and Recommendations 104
References 104
Resources 106

X. Health Assessment and Intervention Techniques for 3-, 4-, and 5-Year-Old Children 109
Victoria Hertel
Introduction 109
Physical Assessment and Intervention 110
Intellectual and Verbal Screening and Intervention 112
Emotional and Social Screening and Intervention 113
Anticipatory Guidance of Childhood Activities for Parents of 3-, 4-, and 5-Year-Olds 115
Reference 121
Resources 121

The Preschool Environment

XI. Health Promotion Through Parent Involvement in Early Childhood Education 125
Marjorie J. Kostelnik
The Changing Nature of Parent Involvement 125
Barriers to Parent Involvement 128
Characteristics of Effective Parent Involvement Efforts 130
Summary 139
References 140
Parent Involvement Resources 143

XII. Health and Safety Education for Caregivers 145
Lloyd M. Hofer
Introduction 145
The Caregiver as a Role Model 147
The Role of the Caregiver in Promoting Healthy Development 147
Health and Safety Requirements for Day-Care Programs 148
Developing Caregiver Skills 149
Involving the Health Professional in Caregiver Education 150

Appendix A 152
Appendix B 154
References 155
Resources for the Caregiver 155
XIII. Playground Management and Safety 157
Louis Bowers
Introduction 157
Quality Playground and Safety Principles 161
Summary 163
References 164
Resources 164
XIV. Injury Prevention in the Child Care Setting 167
Albert Chang
Introduction 167
Establishing an Injury Prevention Program in the Child Care Center 169
Epidemiology and Prevention of Specific Injuries 171
Summary 176
References 177
Resources 178
Acknowledgement 178
Contributors 179
Index 181

List of Figures

Chapter III
Movement and Motor Development in Early Childhood

Figure 1: Hierarchy of Skill Development 25
Figure 2: Content Categories 26
Figure 3: Factors Affecting Catching Performance 29

Chapter IX
Motoric and Fitness Assessment of Young Children

Figure 1: The Interaction of Objectives, Needs, and Assessments 91
Figure 2: Success-Failure Syndrome: Interaction with Assessment 94
Figure 3: Model of a Developmental Sequence 98

Chapter XII
Health and Safety Education for Caregivers

Figure 1: Illness Observation Sheet 150

List of Tables

Chapter IX
Motoric and Fitness Assessment of Young Children

Table 1: Cognitive Concepts Appropriate to Learn Via Movement in Early Childhood 90

Table 2: Summary List of Purposes of Assessment 92

Table 3: Summary of Fundamental Motor Skill Stage Characteristics from the Motor Performance Study, Michigan State University 95

Table 4: Age in Months at Which 60% of Children Perform at Specific Developmental Levels of Selected Fundamental Motor Skills, by Gender 98

Table 5: Developmental Sequences of the Skip: Component Approach 99

Chapter XI
Health Promotion Through Parent Involvement in Early Childhood Education

Table 1: Five Major Types of Parent Involvement 126

Table 2: Variable Characteristics of Parent Involvement 131

Table 3: Examples of Practices to Promote the Five Types of Parent Involvement 134

Table 4:Sample List of HPRD-Related Goals 135

Table 5: Saturday Morning Parent-Child Motor Skills Workshop 137

Chapter XIV
Injury Prevention in the Child Care Setting

Table 1: Haddon's Injury Reduction Strategy in Prevention of Scalds in Children 168

Table 2: Injury Report Form 170

Table 3: Recommended Adult:Child Ratios for Swimming Activities in the Child Care Setting 176

Preface

"Preschoolers"—those inquisitive, active little 3-, 4-, and 5-year-old children. Our future.

The preschool years—or "formative" years—are just that—formative. These children are learning much more than letters and numbers. They are learning about **themselves**. *"How does my body work?" "How fast can I run?" "What is it like to be a cloud?"* Questions like these are answered through their own experiences. *"How high can I jump?" "Well, jump up and find out!"*

This monograph is dedicated to the individuals who give their time, effort, and love to our young population. It is hoped that the information will assist parents, caregivers, preschool teachers, health care professionals, and teacher trainers. The purpose is to help children have a happy, healthy, and safe childhood—and a start to a bright future.

Current Status of Preschool Programs

I

Young Children: An Introduction

Connie Jo Smith, Ed.S

"Young children are not good sitters"
—James L. Hymes, Jr.

Although young children can sit for short periods, it is not natural for them. Their bodies are in motion and they need space and freedom for movement. Young children twist, turn, creep, crawl, climb, leap, jump, and run. Young children's movement occurs so frequently and naturally that we often make the mistake of assuming that physical development and positive health habits will also occur naturally and do not need guidance. Young children's minds are also naturally active and always questioning; however, we would not be as likely to assume that intellectual development will just happen and does not need guidance.

According to Hymes (1981), young children are not good at sitting or at being quiet. Hymes also describes young children as being highly egocentric, shy, hungry for stimulation, earthy, practical, and concrete minded. Hymes continues his description of young children stating that they want to feel proud, big, and important. The one description of young children used by Hymes which is frequently forgotten by adults is that they are beginners.

Hymes (1981) also points out that children are unique and have individual differences. Although there are general characteristics of young children, it is important to respect their individuality. Young children have their own interests, abilities, learning styles, and personalities.

Even though many would agree that generally children are not good at sitting and keeping quiet, it has only been recently that the field of early childhood education has had some agreement on how that information should influence the programs for young children. *Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age 8* (Bredekamp, 1987) is described by the National Association for the Education of Young Children (NAEYC) as a definitive work reflecting our profession's consensus of what are appropriate and inappropriate teaching practices for young children. Developmentally appropriate practice includes recognizing what children are naturally good at, such as exploring and moving,

and building a program to meet their needs instead of expecting children to change. A developmentally appropriate curriculum for 3-year-olds emphasizes language, activity, and movement, with large muscle activity being a primary element (Bredekamp, 1987). Providing developmentally appropriate child care facilities becomes more important as the number of children enrolled in child care increases. One half of all preschool age children have mothers employed outside the home, reflecting that child care is a need. Ninety percent of women polled at the end of 1989 rated child care as a very important issue (*Children, 1990*). Although the family is primary to children, additional child care and support services are necessary for America's children in today's society.

Building a program to meet children's needs is growing more difficult as the needs continue to increase and become more complex. The preschool years have been identified as crucial years when significant learning occurs. Providing quality experiences for young children would be challenging even if we did not consider poverty and health needs. However, poverty and health needs must be considered.

In developmentally appropriate early childhood education programs, health education is essential. Health education in preschool should include a comprehensive approach, but may include single-topic curricula focusing on safety, nutrition, mental, dental, or physical health. Providing the opportunity and guidance for physical development in young children will not only contribute greatly to their health, but to their total development.

According to Hurlock (1972), the development of motor skills and body control is necessary for total development of each child. Hurlock states that there is a significant relationship between motor development and the social and intellectual progress of children. Cratty's (1972) research indicates that skills such as running and jumping are helpful to children in learning number and science concepts. The psychomotor, cognitive, and affective domains often overlap (Gallahue, 1975).

In addition to selecting and utilizing a curriculum designed to teach young children a healthy life-style, there are many other staff responsibilities related to promoting health. Accurate health records must be kept to ensure that all immunizations are current and that staff are aware of any health conditions children may have. Records should be kept regarding administration of medicines, observations of potential health problems, and injuries. Records regarding the health of the staff members are also necessary for licensing requirements in many states. Staff members need to be prepared to handle medical emergencies and ill children. The physical environment must be clean and free of all hazardous materials. Children in centers for long periods should be served nutritious meals and snacks. Many programs also include a parent involvement and education component providing health information and training to parents.

Health and physical education are important elements of a young child's life in preschool and at home. Children of all income levels share some needs and a healthy start is one of them. In the Children's Defense Fund publication, *Children 1990*, alarming statistics remind us of the grave necessity to address children's poverty and health needs. Ten thousand American children die each

year because of poverty. There are 12 million poor children in America and most of them live with parents who work, often at minimum wage jobs. *Children 1990* refers to a study of eight industrialized nations (United States, Switzerland, Sweden, Norway, West Germany, Canada, England, and Australia) in which America had the highest poverty rate.

Children are the poorest group in the United States society according to *Children 1990* and a March 31, 1990 interim report from the National Commission on Children (*Opening Doors*, 1990). The interim report states that poverty is becoming more widespread. One in three urban children live in poverty. One in four rural children live in poverty.

The interim report expresses concern that poor children in America have the most health problems and the least access to health care. Only about one half of the children eligible for medicaid are covered. Insurance costs continue to skyrocket and many families who do not have insurance provided as an employment benefit cannot afford to purchase coverage. Public health services are unable to meet the health needs of the poor. Many rural areas are unable to attract and maintain health professionals. Many young children's basic health needs are not being met at home or by other support services. Although poor children have the most health problems, all children have basic health care needs. Many middle income parents may neglect their own and the health of their children due to leading a busy and highly stressed life-style.

Health problems for preschool children often begin with lack of prenatal care. Each day in America, 689 babies are born to women who have had inadequate prenatal care. And each day in America 2,795 teenagers get pregnant (*Children*, 1990). Teenage mothers often are unable to provide for the financial and health needs of a baby. One-year-old American babies have lower immunization rates against polio than 1-year-olds in 14 other countries. Polio immunization rates rank behind 480 other countries for American non-White babies. Thirteen out of 1,000 babies die before their fifth birthday (*Children*, 1990).

Young children also suffer drug-related health problems. Children's health problems due to parents' drug use during pregnancy are all too common. The children may also be subjected to violence, child abuse, and neglect resulting from parental substance abuse (*Opening Doors*, 1990). Substance abuse and child abuse and neglect are not limited to the poor: abuse crosses all income levels.

Health problems for young children may occur due to homelessness. The Children's Defense Fund (*Children*, 1990) states that 100,000 American children are homeless. Lack of basic shelter and food creates an ongoing crisis for young children.

As we reflect on childhood, we like to enjoy thoughts of carefree days and joyful times. These dreams are not reality for many of our American children. Economic and social trends have changed the conditions of families and children. Many of our young children are at risk of academic failure because they have not had their basic needs, including health care, met (*Opening Doors*, 1990).

Preschool teachers and parents are frequently not experts in the area of health, yet are responsible for the health of young children. For the sake of

children it is necessary that preschool educators and parents combine their knowledge of children with the health expertise of others. By gaining health-related knowledge adults can model and encourage positive health practices. Preschool programs can and should be designed to incorporate comprehensive health and physical education.

This monograph includes information which is useful to parents, early childhood teachers, care givers, and trainers interested in increasing their knowledge of health and physical education. This monograph also is beneficial to health educators interested in increasing their knowledge related to young children.

General information about children in our nation and the early childhood profession provides a foundation for the health and physical education information in this monograph. The health, movement, and physical education chapters described below provide basic knowledge. "Educating Young Children About Health" addresses why comprehensive preschool health education is important, identifies the content of health education for preschoolers, and provides tips about selecting appropriate curriculum. "Movement and Motor Development" stresses that movement serves as the basis for psychomotor, cognitive, and affective development. "Dance in Early Childhood Education" shows us that creative dance reflects the life experiences of children. "Physical Activity of Young Children in Relation to Physical and Mental Health" reveals that up to 50 percent of U.S. children do not get enough exercise.

Several sections address the individual differences and needs of young children. "The Impact of Public Law 99-457 on Health, Physical Education, Recreation, and Dance" provides a brief summary of the law, its impact on preschoolers, and challenges to expect in implementation. "Preschool Children with Developmental Delays/Disabilities: Individual Differences and Integration" discusses that 10-15 percent of America's population have problems severe enough to qualify for special education. "Motoric and Fitness Assessment" and "Health Assessment and Intervention Techniques for 3-, 4-, and 5-Year-Old Children" address the need for screening and different approaches.

Some chapters relate to the preschool environment. "Health and Safety Education for Caregivers" summarizes a safety survey which reflects that health and safety issues are considered important by parents, caregivers, and directors. "Injury Prevention in the Child Care Setting" begins by telling us that accidents are the leading cause of death in young children in the United States. "Playground Management and Safety" provides valuable information to increase the safety of preschoolers on playgrounds.

One chapter is "Health Promotion Through Parent Involvement in Early Childhood Education Programs." Many early childhood programs understand that involving parents in their children's education creates long-term effects. This approach may be a large part of the solution to the nation's massive health problems for children.

The overwhelming problems and conditions that threaten children's health and well being have evolved over the course of time. Solutions will be complex and require a long-term, ongoing commitment from many. Although the readers of this monograph will not have the finances and time to address all health problems for all young children, the information can be used to make a difference in the health of many young children.

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II

Early Childhood Education: The National Scene

Margie R. Hanson, Ph.D.

Introduction

As we enter the decade of the 1990s, one of the most dramatic changes in 20th-century education is taking place with a focus on the preschool child. More than 30 states now have 4-year-olds in their public school programs. Some states are considering taking in 3-year-olds. In a 1990 edition of *Early Childhood Education and the Public Schools*, the National Education Association urges states to mandate the availability of early childhood education programs in the public schools for all 3- and 4-year-olds by the year 2000.

Causes/Concerns

The changing demographics of the nation, to that of single parent homes and to that of both parents working, has caused the greatest impact on the early childhood public school programs. It has also created a need for more nursery schools and day-care facilities, affecting children from birth to 12 years. It has created a need for more infant and toddler care as well as demands for nursery school, day care, and prekindergarten public and private school programs. The effort extends to ages 10 to 12 with the need for after-school care for latchkey children. There are a variety of settings in which provisions are made for these children such as day care, home care, private nursery school, public nursery school, church programs, private studios, and Head Start. This chapter will focus on the special needs for 3- and 4-year-olds wherever they are.

In addition to the changing societal patterns, increased knowledge about children and learning is influencing decisions to provide young children better and earlier meaningful experiences. The success of Head Start is now well documented; hard data are becoming more available on the effects of exercise on young children, the importance of bonding and social relationships, security needs of children, how children learn, and the importance of the child's environment for exploring and developing.

The World Scene

There is also increasing concern about the plight of the children around the world. Witness the first World Summit on Children attended by heads of state from more than 100 nations at the United Nations Educational, Scientific and Cultural Organization (UNESCO) in September 1990. The 1989 document, *The Convention on the Rights of the Child* (United Nations, 1990), plus the World Conference on Education for All, held in Thailand in March 1990, served as basic information for the summit. *The Convention on the Rights of the Child* focuses on the survival, protection, and development of children. This treaty is comprised of 51 articles in which there is specific mention of the rights of children for physical activity, for healthy life, for play, and for culture and leisure activities to which the health, physical education, recreation, and dance professions contribute so vitally. At this writing, more than 70 countries have endorsed the treaty, and ratification is taking place rapidly with nearly 20 countries, although not the United States, having signed. Ratification is not legally binding, but it is morally binding.

National Initiatives

In the United States, there have always been groups interested in the status of children; they have led the way to such federal legislation as the Child Care Labor Laws, Head Start Public Law #94-57, Children's Defense Fund, the Child Care Act, and others of similar nature. These efforts have been directed mainly to the disadvantaged child.

The primary organization promoting the education of young children, the National Association for the Education of Young Children (NAEYC), focusing on birth to age 8, has promoted, defined, and led the way for children's education. NAEYC has grown dramatically in the past 10 years from 30,000 to 75,000 members. Other organizations concerned with young children include the Association for Childhood Education International (ACEI) serving ages birth to 12, the Southern Association on Children Under Six (SACUS), and the National Head Start Association (HSA).

The primary surge of interest by national associations serving other than early childhood began in 1988. At that time, the National Association of State Boards of Education (NASBE) united with National Association for the Education of the Young Child (NAEYC) to name a blue-ribbon committee to hold regional hearings, to conduct a national survey of preschool needs, and to develop a common policy agenda for ages 3 through 8 in public schools. The resulting report, titled *Right from the Start*, is available from NASBE. The American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) made input at local hearings.

The report from NASBE quickly energized several other national associations. The Council of Chief State School Officers (CCSSO) in 1988 endorsed a comprehensive early childhood and family education plan calling for access for all children to prekindergarten programs, public supported day care, and increased federal involvement for children at risk. Children at risk (poverty, disadvantaged, handicapped, separated families) have been the first targeted audience, but the intent is to serve all children as soon as funds are available.

In the fall of 1989, the NAEYC and early childhood specialists in state departments of education invited more than 30 major education associations to examine early childhood policy issues and to develop guidelines for curriculum and assessment for ages 3 through 8. In November 1989 the guidelines were endorsed, in principle, unanimously by all participating organizations. It was a historic agreement on a common policy for children's programs.

The National Education Association began development of the publication *Perspectives on Early Childhood Education* (Felton, 1991), which includes AAHPERD-contributed chapters on health and on physical education, dance, and play. In addition, NEA is developing a series of 20 monographs on early childhood education to be available in 1992. In June 1990, the NEA published a policy statement on *Early Childhood Education and the Public Schools* which was endorsed by its board of directors.

Federal initiatives include a National Commission on Children chaired by Jay Rockefeller III, which reported to Congress in March 1991 on the status of the nation's children. Added to all of these efforts, President George Bush called the Governor's Summit Conference on Education in February 1990, the first in United States history. Specific recommendations from that conference, set forth in goal statements, all relate to preschool in some way, but Goal #1 is most directly applicable. It states the following:

> By the year 2000, all children in America will start school ready to learn. To meet these goals, it is necessary to focus on prenatal care; parent education and health care, nutrition services for homeless, child care, Head Start, Home to School Transition.

Summary of National Association Recommendations

Throughout the policy and agenda statements issued since 1988 there is an overwhelming consistency of stated beliefs and practices, which are as follows:

- Provide developmentally appropriate curriculum.
- Encourage "primary units" for sequential developmental comprehensive needs of children ages 3 to 8.
  - Consider this a continuous developmental unit
  - Make primary grades look more like preschool
  - Avoid tracking
- Expand parental involvement; encourage family partnership with schools.
- Develop comprehensive services including health and social services.
- Prepare better assessment; less test-oriented; reject normative standards; discourage standardized tests; develop optional ways of assessment such as observation/journals.

- Discourage retention.
- Intervene early to reduce dropout rates.
- Focus on young children at risk, now; expand to all as funds are available.
- Be world oriented; capitalize on multicultural populations.
- Move out of K through 12 configuration; include 3- and 4-year-olds.
- Instill self-esteem and provide a sound base of experience.
- Realize that a child's way of learning is play and exploration; experiential at his/her own pace.

Controversy: Curriculum and Methods for Ages 3 to5

In the public arena, there exists a controversy as to the focus of preschool education. There are those who believe preschool education should be academic or structured to get a leg up on learning; children should be learning numbers and letters and moving into formal reading readiness normally done in first grade. Anything that can be done to improve performance in these basics is appropriate curriculum. Such a classroom will have a lot of paper and pencil activities, more strict discipline and less physical activity. This emphasis is perpetuated by parents wanting to get their children into the "best schools" and to meet the myriad academic requirements that exist all the way up the school ladder.

The overwhelming policy/agenda of the education organizations is that the curriculum should be "developmentally appropriate," which is quite different from a predetermined performance of "How Ready Are You for Academia." This translates into developmentally appropriate activities—for any child to learn at his/her own pace according to his/her own capacity and interests, and to provide an intellectual, socially stimulating environment for that to happen. There is more hands-on activity, a less formal classroom, the arts and movement are central to learning, parents are partners, and programs are tailored to the needs of children. An appropriately designed and changing environment is a key to motivation.

The prevailing opinion of leading education organizations is to allow children to develop according to their maturational needs and abilities, not to force them to predetermined academic standards. The good news is that the importance of early childhood education is fully acknowledged. The task, now, is to implement for all.

Implications for Health Education, Physical Education, Recreation, and Dance

Early childhood educators have always believed that health education, play, vigorous physical activity, and opportunities in the arts are essential to the development of young children. The disciplines of health, physical education, recreation, and dance have a golden opportunity and an enormous responsibility to provide meaningful experiences for children.

Physical educators are skilled at teaching children to learn to move better while early childhood educators believe wholeheartedly in learning by moving. There is a real opportunity to capitalize on both—learning to move and moving to learn. Since play is a child's way of learning, it is important that safe playgrounds be designed with appropriate type and size of equipment. The early years are golden years for developing motor skills essential to a lifetime of joyful physical activity. Everyday living provides myriad ways to help children develop essential health knowledge and health habits. Finally, the arts are central to a child's learning. Music and visual arts get considerable attention in preschool, but leaders need to be encouraged to use the medium of creative dance for expressing ideas and feelings, for developing a sense of self-esteem, and simply to add to the joy of moving.

Early childhood educators do provide these activities for children but they are eager for additional help and interpretation to make them more meaningful and developmentally appropriate.

Watered-down primary programs are not acceptable for preschool. Curriculum must be designed specifically for the 3- and 4-year-old. Certainly the movement education and motor development models in physical education lend themselves nicely to meaningful activity. Children need to be free to move. Waiting in line, circle games with only two children moving, doing exercises on command, forcing a child to do something beyond his/her ability, and evaluating by testing are examples of inappropriate ways of working with young children. Key words and phrases such as *self-esteem, assessment, observation, working according to one's ability, opportunities for all, skill development, individual challenges, socialization,* and *maximum activity* all provide guidelines for planning children's activities.

Challenges to the Profession

The early childhood boom was foreseen by a number of persons, but not to the extent of its rapid growth. Today more than 45 percent of all children have some form of early childhood education. With this sudden increase, sufficient teachers and leaders have not been prepared to work with this age group.

Very few professional preparation institutions have done an adequate job of preparing teachers of elementary physical education, health education, dance education, and play leaders, and have barely entered the preschool field; therefore, in-service opportunities are essential. Different patterns of in-service need to be tried. The Physical Education Office of the Minnesota State Department of Education has developed a good working manual and is taking

workshops to the teaching, day-care, or nursery school site immediately after the children go home. They are having good success.

Another form of in-service is the partial- or all-day workshop at local, state, regional, and national conventions. Specialized conferences are also in great demand, especially a one-day, drive-in conference at low cost.

One of the greatest needs is the development of resource materials, both printed and audiovisual. These need to be practical, easy to administer, user-friendly, and meaningful. We must avoid the pitfall of gimmicks and watered-down elementary programs.

Scholarly interchange between teachers of dance, physical education, play, and health education and early childhood leaders, child development specialists, and administrators is essential. Throughout it all, keep in mind that the parent is a wonderful ally and can contribute immensely to make a program successful.

It's an exciting time and an opportune time. We are in on the ground floor and our profession can grow for the good of children with the whole early childhood thrust.

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Values of Health, Activity, and Movement Education

III

Movement and Motor Development in Early Childhood

Donna Hester, Ph.D.

Introduction

The importance of movement in the life of a young child has been established by physical educators and child development specialists (Boucher, 1988). Movement serves as the basis for psychomotor, cognitive, and affective development. It is necessary for normal growth and for the development of physical fitness and basic motor skills. Movement may also enhance academic readiness. Through movement experiences, a child can develop self-confidence as well as an accurate concept of his/her capabilities. Motor development concerns the study of sequential, progressive changes in motor performance and the factors that influence these changes throughout the lifespan. Two of these factors—the principles of development and physical growth and development—are described in the following paragraphs.

Principles of Development

When studying the motor development of young children, it is important to consider the principles or trends of development. Familiarity with these principles of development enhances a teacher's understanding of how young children acquire motor skills and helps them have realistic expectations. The following section includes a discussion of four principles or trends: (a) directions of development, (b) gross to fine movement, (c) the roles of maturation and learning, and (d) the sequence of development.

Directions of Development

Cephalocaudal and proximodistal describe the orderly and progressive directions in which growth and maturation proceed. The order in which a child gains control over his/her body demonstrates the cephalocaudal "head to tail" direction of development. That is, the head is controlled first, followed by the neck, trunk, hips, legs, and feet. The size of an infant's head in proportion to the rest of his/her body also demonstrates this need. The stiff leg and flat foot walking technique used by a toddler shows the cephalocaudal direction as well. He/she can control the hips to swing the entire leg, but cannot yet control the

flexion and extension of the knee or ankle. A child throws with control before he/she kicks; this also illustrates the cephalocaudal direction of development (Payne & Issacs, 1987).

The attainment of the skill of grasping points out the proximodistal, "from the center or midline of the body to the periphery" direction of development. Initially, the infant controls the arm as a unit, followed by control of the hands, and eventually the fingers and thumb. This direction of development is also clear in the developmental progression of the skill of catching. A child catches a ball using his/her arms and body before using the hands and fingers in a "cup-like" fashion (Wickstrom, 1983).

Gross to Fine Movements

Children gain control over the large (gross) muscles of the body followed by control over the smaller (fine) muscles. Traditionally, motor skills have been categorized as either gross or fine. A more contemporary view is that few movements are totally one type or the other (Payne & Issacs, 1987) but rather combine movements of the large and small muscles. For example, the skill of throwing involves the use of the large muscles of the arm and shoulder as well as the smaller muscles in the hand and fingers. The large muscles are essential in producing the force of the throw while the small muscles are important for the accuracy component of the throw. Therefore, if a child does not have control of the small or fine muscles, the teacher should not expect the child to throw with accuracy. The emphasis for a child at this stage of development is on the large muscle component of the throw, i.e., force production. Therefore, large targets for throwing and striking activities are important. Large targets lessen the importance of small muscle control necessary for accuracy.

Maturation and Learning

A third principle or trend relates to the combined influence of maturation and learning upon motor development. Until a child is physically and cognitively mature enough to learn a skill, he/she does not benefit from instruction and practice of the skill (Gabbard, LeBlanc, & Lowy, 1987). Maturation implies that the neurological and physical development of the child is such that he/she is capable of performing the skill. There may be times when the child is physically ready to perform a skill, but does not have the cognitive ability to process the required information. For example, a 5-year-old boy has mastered the basic elements of the beginner swimming stroke and is ready to progress to a more advanced stroke such as the elementary back stroke. However, even though he is physically capable and ready for the skill, he is unable to process mentally the cross-lateral movements necessary. This results in frustration for both the child and the teacher. When a 4-year-old girl states "I know what to do but I just can't make my body do it!" she is communicating that she is cognitively aware of how to skip but is physically unable to put the movements together.

Progressive and Sequential

The fourth principle is that development is progressive and sequential in nature. All children follow a predictive, progressive sequence of development.

However, each child has a unique hereditary endowment and therefore moves through the sequence at his/her own rate (Haywood, 1986). This principle applies to physical growth as well as motor skill development. It implies that not all children of the same chronological age are at the same point in the sequence of development and, therefore, are not necessarily ready for the same experiences.

Physical Growth and Development

Growth represents change in size while development represents a continuous process of change in function. In order to design appropriate movement experiences for young children, early childhood and physical education professionals must understand the normal growth and development of the various systems of the body, such as the skeletal, muscular, and nervous systems. Changes in the skeletal and muscular systems result in height and weight changes. A brief description of the changes in height, weight, and body proportions that take place during early childhood and their relationship to motor development follows. For a more detailed description of growth and development over the lifespan, refer to Haywood (1986) and Payne and Issacs (1987).

Height and Weight

Preschool children have just completed a rapid growth spurt in height and weight during their first two years of life and are now experiencing a rather steady growth period. Gains in height are about 2.75 inches per year, while weight gains are approximately 4.5 pounds per year (Payne & Issacs, 1987). This period of steady growth is a good time to develop a wide variety of movement skills.

Body Proportions

The body proportions of the young child are much different from those of the older individual. This is due to the differences in degree and timing of the growth of various segments of the body (e.g., head, trunk, and legs). Because of this disproportionate growth, the center of gravity varies markedly during childhood. Young children carry a larger proportion of their weight in their upper bodies and are, therefore, "top heavy" (Payne & Issacs, 1987). This high center of gravity, coupled with a small base of support, results in typically poor balance among young children. Balance is an underlying influence of all motor skill development. Therefore, teachers must have realistic expectations for young children in terms of learning motor skills which rely on balance (e.g., running, kicking).

Elements of Early Childhood Physical Education Programs

Planned physical education experiences based upon an understanding of motor development and the developmental needs of children, should be an

integral part of the preschool curriculum. Such experiences provide appropriate activities to aid in promoting normal motor development. According to Grineski (1988, p. 92), there are five reasons that justify physical education programs for young children. Early childhood physical education programs (a) foster normal development through appropriate physical activity, (b) take advantage of the readiness of young children to develop and practice motor skills, (c) increase the potential that critical learning periods are not missed, (d) fulfill the need and desire of young children for movement, and (e) develop fundamental motor patterns. Thus, the purpose of early childhood physical education programs is to establish a foundation of movement awareness, fundamental movement patterns, and fitness.

Developmental Characteristics

The developmental characteristics of young children are of primary consideration when determining appropriate movement experiences for young children.

- Preschool children have short attention spans. Therefore, the teacher/leader must change activities often and keep sitting and waiting to a minimum.
- Binocular vision is developing slowly, therefore, hand-eye object handling experiences are a must.
- Young children are egocentric in nature. Thus, individual and small group activities are more appropriate than large group activities.
- Most young preschoolers do not have a dominant or preferred eye, hand, and foot for performing motor skills. It is important to provide experiences in using both sides of the body. For example, "kick with right and left foot," then "kick with the left foot."

Hierarchy of Skill Development

Figure 1, the Hierarchy of Skill Development, illustrates the progressive and sequential nature of motor skill development. Attainment of skills at each level of the hierarchy builds upon the skills learned at the previous level.

Body management competency includes the aspects of body awareness and space awareness needed to control ones body in a changing environment. This includes being able to control the body while stationary and moving in a variety of positions such as upright or inverted, on the ground, and on various pieces of apparatus.

Fundamental movement patterns (e.g., running, jumping, throwing, and catching) are those skills that serve as the building blocks for sport-related skills used in lead-up games during the elementary school grades. Specific sport skills are those skills used in regulation, individual, and team sports typical of middle and high school physical education programs. The specialized skill level of the hierarchy involves the refinement of the specific sport skills.

Figure 1
Hierarchy of Skill Development

A good foundation of body management and fundamental movement patterns is important for the development and refinement of specific and specialized sport skills. The example of a basketball player maneuvering past an opponent to make a lay-up shot illustrates the importance of this foundation. The successful player combines the body management competency of space awareness and the fundamental skills of dodging, running, and hopping with the basic sport skill of shooting a basketball.

Attainment and improvement of motor skills are not automatic. The extent to which an individual moves up the hierarchy depends upon the combined influence of innate ability (heredity) and opportunity (environment). Through successful, developmentally appropriate movement experiences, all children have the opportunity to develop skills at each level of the hierarchy

Indications are that activity patterns develop during early elementary school (McGinnis, 1987). Therefore, preschool children need the opportunity to experience a wide range of activities and develop a variety of physical skills. A child chooses to participate only in the activities in which he/she feels competent and confident. Because the life-style of a child, once established, is difficult to change, early positive movement experiences are essential. A child who experiences success in a movement environment is more likely to develop a positive attitude toward movement which in turn may influence future movement behaviors.

As stated by Roberton and Halverson (1977), a child who has not progressed beyond the initial skill level may enter into a cycle in which he/she feels poorly about his/her skill level and avoids the opportunity to participate in activities. The lack of participation prevents the child from improving his/her skills and results in the development of a negative self-concept and attitude toward movement.

Content Categories

The following section describes the content categories of the preschool motor development/physical education program. (See Figure 2.) These categories reflect levels one and two of the Hierarchy of Skill Development.

Figure 2
Content Categories

Movement Awareness	Fundamental Motor Patterns	Physical Fitness
Kinesthetic Perception	Locomotor	Health-Related
Body Awareness	Run	Cardiovascular
Space Awareness	Jump	Muscular Strength
Laterality	Leap	and Endurance
Directionality	Hop	Flexibility
Balance	Gallop	Body composition
Visual Perception	Slide	Skill-related
Depth Perception	Skip	Speed
Figure-ground	Manipulative	Agility
Form Discrimination	Throw	Power
Temporal Awareness	Catch	Coordination
Synchrony	Kick	
Rhythm	Strike	
Sequence	Bounce	
Eye-hand	Roll	
Eye-foot	Nonlocomotor (stability)	
Auditory Perception	Twist/turn	
Figure-ground	Bend/stretch	
Sound Localization	Push/pull	
Temporal Auditory Perception	Swing/sway	

Movement Awareness. As stated by Gabbard (1988), this category refers to elements of the perceptual-motor system that are necessary for movement efficiency and motor skill performance. This includes the aspects of kinesthetic, visual, temporal, and auditory perception that contribute to skill development and that are necessary for development of body management competency. Various authors classify the perceptual-motor components in different ways. In this paper, the terms *perception* and *awareness* are interchangeable. For a more thorough description of perceptual-motor development components, refer to Haywood (1986).

Kinesthetic perception is an awareness of the position of the body and its parts in space as well as movements of the body and body parts. This includes body awareness, space awareness, laterality, directionality, and balance. *Body awareness* refers to identifying and labeling the parts of the body on oneself and others and making various body shapes. *Space awareness*, an extension of body awareness, includes the spatial dimensions of up and down, front-back, and side. *Side awareness*, or *laterality*, (Haywood, 1986) is an awareness of the two sides to the body and that each side moves independently or in coordination with

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the other side. *Directionality*, often linked to laterality, is the ability to project the body's spatial dimensions into surrounding space (Haywood, 1986). Visual perception plays a dominate role in most skill development. Visual perception includes figure-ground discrimination, depth perception, form perception, and perception of movement. *Figure-ground discrimination* refers to being able to locate visually and distinguish an object from its background. *Depth perception* allows an individual to judge the distance from his/her body to an object or surface. *Form perception* includes recognition of various shapes and sizes of objects. *Perception of movement* "involves the ability to detect and track a moving object with the eyes" (Haywood, 1986, p.177).

Balance is also known as stability or body equilibrium. Integration of information from the kinesthetic, visual, and vestibular systems of the body help to maintain balance. It is an underlying ability that transcends most fundamental movement patterns.

Temporal awareness, as stated by Gallahue (1982) and Gabbard et al. (1987), relates to the "timing" mechanism in the body. This includes: (a) the ability of the body parts to work together smoothly (*synchrony*), (b) the ability of the body parts to work together smoothly to an imposed tempo (*rhythm*), (c) putting the actions of a skill in the proper order (*sequence*), and (d) combining synchrony, rhythm, and sequence in an integrated manner (*eye-hand* and *eye-foot coordination*).

Auditory perception involves judging the location of sounds (*sound localization*) and attending to relevant sounds while ignoring others (*figure-ground discrimination*). *Temporal auditory perception* (Gabbard, 1988) involves the ability to perceive and discriminate variations of sounds presented in time. This aspect of movement awareness, combined with temporal awareness, allows an individual to move rhythmically to auditory stimuli.

Fundamental Movement Patterns. As shown in Figure 2, fundamental movement patterns include three categories: locomotor, manipulative, and nonlocomotor. These patterns are the building blocks for future sport skill development (see the Hierarchy of Skill Development). Locomotor movements, the first group of fundamental patterns, involve these movements that transport the body from one location in space to another. Manipulative movements, the second group, involve projecting and receiving objects usually with the hands, feet, or a small implement such as a bat or paddle. Nonlocomotor movements, often referred to as stability, involve minimal change in the base of support.

The fundamental movement patterns, especially those in the locomotor and manipulative categories, develop in a predictable, sequential fashion. Vast amounts of information are available about how a child progresses from using the initial form of the movement, such as outstretched arms in preparation to catch a ball, to the mature form with arms relaxed at the sides of the body. Another chapter of this monograph presents more detail on the development and assessment of fundamental skills.

Fitness. Including fitness in early childhood physical education programs has received increased attention during the '80s. The major fitness emphasis for young children is to develop positive attitudes toward movement and thus encourage an active life-style. The focus is on positive fitness behaviors rather

than extensive fitness testing and training. The preschool years are important for the development of locomotor and manipulative skills used in activities that will in turn develop both health-related and skill-related physical fitness.

Young children cannot perform most calisthenic exercises correctly. Therefore, such exercises are inappropriate. The development of fitness is enhanced through innovative and fun activities. Recommended activities include animal walks, climbing and hanging challenges, and continuous locomotor movements.

Aquatics. The number of aquatic programs for young children has increased dramatically during the last two decades. In a recent article on contemporary trends in preschool aquatics, Langendorfer (1990) describes the "gradual shift from teacher-centered methods of instruction toward more child-centered, developmental programs." This implies that young children should not be treated as miniature adults. As with fundamental motor patterns, aquatic skills are sequential, progressive, and taught in a way that meets the developmental needs of the child.

Activity and Equipment Selection

Through the use of developmental task analysis (Herkowitz, 1978) and developmentally appropriate equipment and apparatus, teachers can design locomotor, manipulative, perceptual-motor, and fitness activities so that children of all skill levels can participate successfully. Developmentally designed activities ensure the progression and sequence of skill learning.

Developmental Task Analysis

Developmental task analysis (DTA) is a two-step process that (a) identifies the variables which influence and often limit motor skill acquisition and (b) designs sequentially ordered movement activities. This approach requires the teacher to consider all aspects of the learning environment and to determine the most appropriate activity for the child. DTA applies to all locomotor and manipulative skills. The following example involving catching illustrates the use of DTA. For a more complete explanation, refer to Herkowitz (1978).

Two factors known to influence the catching ability of preschoolers are the size and speed of the object. Other factors include the weight of the object, speed of the catcher's movements before the catch, the level the object is traveling, and the length of the implement used to catch. An analysis of these factors indicates that an object that is of moderate size (an 8-inch foam ball) is easier to catch with the hands than a small object (3-inch tennis ball) or a large object (12-inch playground ball).

In addition, an object moving at a slow rate is easier to catch than a fast moving object. With this information, a sequence of catching activities ranging from simple to complex can be structured. For example, an 8-inch foam ball suspended on a rope can be swung to the child by the teacher, another child, or by himself/herself. This gives the child time to track the ball visually and grasp it with his/her hands. A more complex catching activity is to have the child use a plastic scoop to catch a tennis ball thrown by the teacher or a partner.

Figure 3
Factors Affecting Catching Performance

Factors	Simple—to—Complex
Size of the object	Moderate—Large—Small
Weight of the object	Moderate—Light—Heavy
Movement of the catcher	None—Slow—Fast
Movement of the object	None—Slow—Fast
Type of implement	None—Short handle—Long handle

Developmentally Appropriate Equipment

Developmentally appropriate equipment and apparatus are essential for a successful movement program for young children. A piece of equipment or apparatus is developmentally appropriate if it matches the characteristics, needs, and abilities of the children using it. Siedentop, Herkowitz, and Rink (1984) and Herkowitz (1978) offer various strategies in the selection and construction of equipment.

The first strategy is to provide children with several pieces of equipment that are the same shape but of different size. For example, several sizes of balls should be available for use by children whose catching abilities range from unskilled to skilled. Vertical and horizontal ladders with rungs different distances apart accommodate children of various heights and muscular strength and endurance levels.

The second strategy is to provide equipment that children can adjust to accommodate their own developmental levels. Examples of this technique include (a) jumping standards that allow each child to raise or lower the cross-bar, (b) a batting tee with a length of radiator hose that the user raises or lowers to change the height of the supported ball, and (c) a ball attached to a length of rope that is adjusted by an inverted hangman's noose.

Another strategy involves promoting force production in skills such as striking, kicking, and throwing through the use of large targets. Large targets at which to throw, strike, or kick an object lessen the need for highly accurate performances. Large targets encourage a child to throw, kick, or strike as hard as he/she can which in turn promotes the use of a more mature movement pattern.

Commercial equipment companies now provide some equipment that is appropriate for young children. However, it is important to supplement this inventory with homemade equipment. For example, a typical commercially made target is a clown's face painted on a 2-foot x 3-foot square board with 3-inch holes representing the clown's eyes, nose, and mouth. A target of this nature encourages a child to toss or use a "dart throwing" motion rather than the full overarm throw with force.

Summary

In summary, preschool motor development programs should reflect the principles and concepts stated earlier. The role of motor development in the total developmental process is too important to ignore or leave to chance. The design of developmentally appropriate programs are basic to the needs and characteristics of the preschool child.

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Kinderskills, Dr. Linda Carson, West Virginia University, 284 Coliseum-School of Physical Education, Morgantown, WV 26506-6116, (304) 293-4812

ACADIA Kinderskills Motor Development Program, Dr. Bill McLeod, Acadia University, Wolfville, Nova Scotia, Canada, BOP 1X0, 542-2201, Ext. 559

Motor Behavior Center, Dr. Jane Moore, Auburn University, Auburn, AL 36849-5323, (205) 826-4483

Preschool Motor Development (PMD) Program, Dr. Jackie Herkowitz, Ohio State University, 306 Pomerene Hall, Columbus, OH 43210

IV

Physical Activity of Young Children in Relation to Physical and Mental Health

Howard L. Taras, MD

Introduction

To most adults, children always appear to be on the go. Unfortunately, this is simply not the case (Simons-Morton, O'Hara, Simons-Morton, & Parcel, 1987). The level of physical fitness among the nation's children is in decline, with up to 50 percent of U.S. children not getting enough exercise. If this trend is to be reduced, efforts of the nation's educators and parents will have to be employed. Ideally, interventions and programs to increase physical activity should provide nothing but benefits for children's mental and physical health. However, interventions must be careful to avoid potential risks that could, paradoxically, produce a negative impact on either physical or mental health. This chapter describes objectives for children's physical activity programs and how to maximize a positive impact on health.

Importance of Physical Fitness for Preschoolers

The past decade's surge of interest in fitness has induced once-sedentary adults to include jogging, aerobic dance, and sport into their weekly routines. However, the transition from a sedentary to an active life-style has been difficult for many adults. This is because exercise is still not a natural part of many life-styles.

Raising children with the attitude that physical activity is a necessary part of their life-style is a logical and plausible way of incorporating physical activity as a lifetime habit. Preschoolers naturally love to run, jump, and climb and, given the opportunity, they need almost no encouragement. However, parents and preschool educators must provide them with opportunities. And since the natural urge to be physically active will wane in subsequent years, preschoolers should receive verbal praise for active behavior. In later years this will pay off as motivational dividends, that is, a positive attitude toward physical exertion. Physical activity can be taught to toddlers and preschoolers as something good in much the same way as hygienic and proper dietary habits are taught. The lure of sedentary activities like television and, more recently, video games have made parents and child caretaker roles more challenging and more important (Taras, Sallis, Nader, & Nelson, 1989).

Current enthusiasm for fitness among adults originates partly out of the desire for preventing arteriosclerosis (hardening of the arteries) and the subsequent development of strokes and heart disease. Evidence shows that the damage to blood vessels, which eventually causes adult heart disease, begins early in childhood (McGill, 1980). Children who are obese are more likely to become obese adults (Shapiro et al., 1984). Children with relatively high blood pressure responses to stressful situations also have a better chance of developing high blood pressure problems when they become adults (Parker et al., 1984).

Physical fitness and exercise reduces obesity, lowers blood pressure, and tempers the damaging effects of lipids on blood vessels (Moffat & Gilliam, 1979; Pollock, 1973). Because the process towards these diseases begins in childhood, an active life-style should begin in childhood as well (Gilliam, MacConnie, Geenen, Pels, & Freedson, 1982; Sallis, 1987).

To what extent physical activity during childhood will be successful in preventing other illnesses is not yet well understood. However, there is reason to speculate that physical activity throughout life, beginning in childhood, may reduce either the incidence or the severity of many stress-associated illnesses (Morgan, 1979). Back pain, ulcers, diabetes, and many other physical ailments (Kraus & Raab, 1961) may also be seen less frequently in fit populations.

Aside from health advantages of physical activity and fitness which may occur years after childhood, there are certain benefits that develop much sooner. Children feel better and think better when their daily curriculum includes some stretching and some exertive activities. Studies have suggested that children who are physically fit tend to do better academically (Shepherd, 1982). In fact, in one study, a group of school-aged children who exercised daily in school performed much better academically, despite the substantial reduction of daily class time. Improved state of mind with daily exercise may also hold true for younger children in preschool and therefore may benefit cognitive skill objectives in a preschool curriculum.

Another early benefit for physically active preschoolers is the emotional gain from the experience. The acquisition of motor skills helps young children avoid frustration. It has been shown that children have measurably increased self-esteem and an improved sense of accomplishment when physically active (Seefeldt, 1980).

Preschool Physical Activity Program: Preparing the Child for Physical Exertion

Truths and Myths

It is important for preschool educators to distinguish what is truth from what is myth when preparing children for physical activity. There are no specific diets designed to prepare children for exertion. Wheat germ, brewers' yeast, and high protein diets will not prepare a child for physical activity more effectively than a typical well-rounded meal. Salt tablets are not necessary, no matter how hot it is outside. In fact, there is a potential for danger from salt tablet ingestion, which may cause nausea, vomiting, and cellular dehydration in certain children (Nutrition Update, 1988). There is no reason to separate males

from females in sports programs until they have reached puberty. And, finally, children with almost any handicap can still participate in some physical activity. Children with special needs sh ould not be restricted from physical exertion in general, but their activities should be selected judiciously. (Specifics on this can be found in Chapter VIII.)

There are some things that can be done to prepare a preschooler for physical exertion. First, it is reasonable to have a physician perform an annual examination on all preschoolers. There may be precautions or medications specific to the child's health that a parent may not remember or know to mention to the preschool staff. Second, policies and procedures for injury prevention and for first aid must be developed. (This is dealt with in detail in Chapter XIV.) Last, environmental temperature and a child's fluid status in relation to physical exertion should be considered as issues that require advanced preparation.

Recognizing Heat-related Illness in the Exercising Child

Young children are more prone to heat-related problems during exercise than any other group for a number of reasons (Rosenstein, 1988). First, small children have a relatively large amount of body surface area for their weight compared to adolescents and adults. Therefore, the heat in their environment is bound to have a more significant impact on their body temperature. Second, when exercising, small children's bodies produce more heat, pound for pound, than larger bodies. Third, young children have problems ridding their bodies of heat for a number of reasons, one of which is that they don't perspire as effectively as adults. Last, some youngsters lack the instinct to drink and replenish their fluids.

Heat exhaustion is the most common heat-related illness and is a result of both dehydration and high temperatures. Any combination of headache, irritability, weakness, cramps, nausea, vomiting, diarrhea, and mild disorientation may be signs of heat exhaustion. Sweating is often profuse. The measured body temperature, however, is normal.

Heat stroke is a rarer and more serious response to heat. The body usually feels hot and dry and there is a high fever. Any of the symptoms of heat exhaustion may be present, and, in addition, the affected child will be extremely agitated and confused. In rare cases, seizures or coma are the first indications of this illness.

Preventing Heat Stress in the Exercising Child

Physical activity programs for preschoolers which take place during seasons with high outdoor temperatures must be planned in advance so that children are acclimatized to the heat before any exertive activities (Bar-Or, 1983). This can be accomplished by organizing quiet activities outdoors for a few weeks. Frequent rest periods during exertive activities should also be built into the exercise program.

It is important for children to drink fluids prior to physical exertion and to be encouraged to take periodic fluid breaks throughout the activity. The absence of thirst in children is not a trustworthy sign of good hydration, so drinking should be encouraged. Although water is a perfectly good fluid replacement, flavored drinks are sometimes more palatable to children and for this reason alone may be a better option.

Single-layer, light-weight, light-colored, and absorbent clothing, as well as a hat, are advisable in warm weather. The excitement and goals of the game must never distract the supervising adult from observing for signs of dehydration or from preventing it.

Some children are at a higher risk for heat stress than others, and it is important to identify them. These are children with underlying illnesses, obese children, and mentally retarded children, who either don't understand or can't communicate their need for fluids.

Medical consultation should always be sought for children with symptoms of heat exhaustion or heat stroke. While awaiting specific medical advice, take the heat-stressed child to a cool environment. If the child is adequately aware and capable of doing so, provide him or her with cool fluids (American Academy, 1982). A physician may suggest that you cover the child's body with cold, wet towels.

The Role of Structure and Competition in the Preschool Physical Education Program

Structure

There is a great range in the structural nature of physical activities that are planned for young children. Highly structured games and sports are those that are devised, organized, and refereed by adults. Many of these activities are not games played individually but with other children. These would include soccer games and other team sports. At the other end of the spectrum are free play activities, where children are active but without external structure. Adult involvement in free-play activities is, by definition, limited to protecting children's safety and providing space and stimulating toys. Parents and educators must understand the benefits of structured and unstructured activities and be able to recognize when an overemphasis of one has been a problem. To understand the developmental considerations of structure in a preschooler's physical education program, it is useful to review the stages of life immediately before and after the preschool years.

Prior to preschool, infants and toddlers naturally engage in unstructured free play. They have sufficient self-direction to excel at motor skill development (Rarick, 1976). This assumes that the environment is stimulating and safe. Touching, holding, face to face contact, and safe toys (which do not include special equipment) is often all that is necessary for such an environment. Although structured programs are available for toddlers and infants, there is no data to suggest that such programs improve a child's motivation to learn or that they provide any benefit for motor skill development or physical fitness. In fact the American Academy of Pediatrics recommends that the play environment for children prior to preschool be minimally structured (American Academy, 1988).

After preschool, the developmental stage of elementary school children is such that it necessitates structuring a portion of the physical education program. Many children at this stage of life are no longer naturally motivated to develop their motor skills or to improve their level of strength and aerobic fitness

(Shephard, 1982). Therefore, games and sports structured to include development of certain skills or designed to produce high output physical exertion are essential components of educational and recreational programs. Structured activities that involve more than one child also have the advantage of teaching children to interact and cooperate with each other.

Preschool children are between these two stages. On the one hand, they are beginning to benefit from some attributes offered in structured physical activities. On the other hand, they are in danger of not enjoying themselves and losing their spontaneity and motivation for free play activities when there is too much structure or when it is not carefully planned (Holt-Hale, 1983). There is evidence in favor of having at least some structured physical activities for preschoolers. Children at this age have great individual differences in activity choices during free play. These differences are significantly associated with their performance in balance, visual motor control, running speed, and agility (Butcher & Eaton, 1989). Some groups, such as socially disadvantaged children, show fewer tendencies to play (Sutton-Smith, 1969). The same is true for some cultural groups (McPherson, Guppy, & McKay, 1976). Certain structured activities, therefore, would be of benefit to those children whose free play interests are not rich in "active" game participation. Statistically, structure will benefit the physical fitness of female preschoolers more than males because girls tend to be less active during free play than boys (Butcher & Eaton, 1989).

Despite the potential advantages of structured activities, preschool educators must understand that free play should never be completely replaced by structured activities. It is probably best that free play remain one of the major components of any physical activity program for preschoolers. Free play is the natural learning medium of young children, and may well prove to be the best way to optimize self-esteem and enthusiasm for learning (Partridge, 1988).

Setting Goals

It is important that the preschool educator define the goals of an activity. It is also important to communicate to children that there are some components of sport where it is acceptable not to succeed (achieving or winning) and others where succeeding is important (trying and cooperating).

Children older than 3 years are beyond the stage of solely parallel play with their peers. They have begun to develop the ability to interact with other children. Therefore, structuring physical activities that include other children in the game is appropriate. However preschoolers cannot be expected to be sophisticated in their interactions and social behaviors (for example, waiting one's turn, abiding by rules, sharing). These are goals of group activities children cannot be expected to have already mastered.

Physical activities for preschoolers should also include motor skill development and/or increased endurance as goals. It is useful to include the child as a participant in the setting of these goals. This holds true for individual and group activities. There is evidence that some children have more self confidence when the goals for their performance are not set solely by others (Schunk, 1985). Of course, adults have significant roles to play in helping preschoolers set these goals.

Competition

There are at least two categories of methods by which children are motivated to improve their physical performance. One is through competition, where the child is focused on his or her performance relative to others. The other is through individual achievement, whereby the child tries to improve his or her own performance as compared to previous experience at a given task. There is no place for competition in a preschool setting. Children's idea of success should be directed away from *being better than another child,* and towards *being the best one can.* An approach that encourages intrinsic rewards is more likely to have lasting motivational ramifications. It is appropriate for adults to help preschoolers choose noncompetitive goals. Children should be rewarded for their efforts and not their abilities. It is not until the elementary school years that children develop a real ability to compare themselves to their peers (Putnam, 1987).

Aggression: Is It Ever Alright?

It is not news to anyone that coaches often use the pregame pep-talk to develop enthusiasm in their young athletes. A related and less controlled technique is used sometimes by parents to encourage their children (sons more often than daughters) to "be mean" and, thereby be effective out on the playing field. Fortunately such adult sanctioning of childhood aggression is rarely encountered in a preschool environment. It is possible, however, that adults are sending subtle and indirect messages to children, that in effect are encouraging them to be aggressive. For example, in the popular children's game "Musical Chairs," a message that aggression is alright is perceived by some experts to be inherent in the game (Campbell, 1988). The activity consists of a situation where there is one fewer chair than there are children so that each child must fight to stay in the game. Although it is arguable whether playing this game really has any significant impact on children's aggressive tendencies, there is a point to be made here. Games that have no aggressive components as part of their structure will not carry the risks of inadvertently sanctioning aggression, whereas games that do have aggressive components carry some potential risk. Resources for educators who want new ideas for nonaggressive games that encourage fun and exercise are listed in the resource section of this chapter.

Does this mean that preschoolers should never engage in rough play until they are older? No, not at all. Rough-and-tumble play is common and even healthy among preschoolers. It generally occurs during free play time (Blurton Jones, 1976). Children love chasing and being chased. Although rough-and-tumble play is easily confused with aggression, there are clear distinctions (Pellegrini, 1989). For one, aggression is never fun for children; rough-and-tumble play is. Victims of aggression seriously try to separate themselves from the situation. This is not the case with rough-and-tumble play. Aggression is unilateral—not reciprocal. Experienced preschool educators know that, very occasionally, rough-and-tumble play will lead to aggression. However this should not be a barrier to allowing some degree of "horsing around." The progression to aggression is most likely to occur with unpopular children who

have other behavioral problems. For the most part this behavior is rare. There are important cognitive developmental reasons why children engage in rough-and-tumble play. It provides an opportunity for children to meet certain social-affective needs (Pellegrini, 1989). Educators who learn to distinguish aggression from rough-and-tumble play will be better prepared to tolerate the latter in their playgrounds and play rooms.

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Resources

Books for Children Involved in Competitive Sports

(Note: These books are most appropriate for older children, but may be of interest.)

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Bach, A. (1975). *The meat in the sandwich.* (For 10-13 year olds; soccer novel; overcoming feelings of failure.) New York: Harper and Row.

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Books for Parents and Physicians

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V

Dance in Early Childhood Education

Susan W. Stinson, Ed.D., with Teresa Benzwie, Ed.D., Roberta Pasternak, M.Ed., RDMT, Rae Pica, and Elsa Posey

Take a look into an early childhood classroom where children are involved in dance education. The classroom furniture is pushed back, making a large open space. Both boys and girls are moving in the space. They are dressed in school clothes, but may not be wearing shoes. The teacher is accompanying the movement with voice, hand instrument, and/or recorded music, and is fully engaged in the activity. The children may be doing movement with the same name—such as galloping, floating, *or* melting, *although each has his or her own variation of the movement. When they come to stillness, some are in high shapes, some low, some twisted, some angular. The teacher draws attention to their distinct personal choices, using descriptive language. The teacher often presents challenges, asking "Can you find a way to...?" or "How can you do it differently?"*

There is something special about this movement—something hard to describe. There is a quality of concentration and awareness that is different from that observed in children moving in casual play or in an active game. They are moving/thinking/feeling. They are learning. They are dancing.

Introduction

Dance has existed in every civilization since the beginning of human history, resulting in a wide variety of dance forms. Because of this, there are many meanings for the word *dance*. When thinking about dance in early childhood education, we will consider two meanings: dance as a way to learn, and dance as an art form.

Dance as a Way to Learn about Oneself, Others, and the World

Movement and sensory awareness are the ways through which young children learn. For example, young children first learn how big a puddle is by running around it, or jumping over and into it, not by measuring it with a tape measure. Similarly, they learn who they are by what they can do—how high they can jump, how heavy they are when they land. Movement contributes to the development of body image, by stimulating nerve endings that communicate to the brain where one's body ends and the rest of the world begins. Competence in movement also contributes to the child's self-esteem.

Dance, because it involves both movement and sensory awareness, offers many opportunities to learn about oneself. Some of this learning relates to how one can move. Can you turn your head all the way around? Can you shake your eyebrows? How can you fall down without a sound? How can you get higher when you jump?

Learning about self in dance goes beyond where and how the body moves to include personal feelings. How do you feel when you make yourself large or small? Do you feel like bouncing or floating when you hear this music? Does *sad* feel fast or slow? Is *mad* a tight feeling or a floppy feeling? We also have feelings about how our bodies look, move, and feel. Children need to engage in activities that will help them like their bodies and what they can do; this includes children labeled overweight or impaired. Dance provides an opportunity to build an identity—to learn that one can express ideas, opinions, and preferences; that one can be both strong and gentle; that one is worth paying attention to; that one has both limitations and strengths.

Dance is also a way to learn about the world, because ideas for dance come not just from one's body but also from one's own experience in the world. We notice shapes—curves and points, for example—in the classroom, in leaves, in houses—and then make curved and pointed shapes with our bodies. The suspension and fall of a wave, the sideways travel of a sand crab, the crackling of fire, and the drifting of smoke, all suggest possibilities for dance.

In dance, the world around us includes other people, because dance is frequently a group activity. We learn how to respect and accommodate to the point of view of another, to share space, to wait for a turn, to lead and follow, to cooperate, and to support others. We also learn to respect one another, including physical and emotional boundaries, and to appreciate our similarities and differences.

It is clear to most people that movement and sensory awareness contribute to psychomotor and affective learning; it is less obvious how they affect cognition. The work of Jean Piaget has provided valuable insight about how movement and sensory awareness affect thinking (Stinson, 1985). Piaget studied how children form symbols—and therefore language—by internalizing movement. For example, children move up and down before they know these words. Next, the words become associated with the movement and the accompanying body sensations; young children cannot think or talk about movement without doing it. Gradually the words begin to stand for the movement: the need to do the full movement disappears, and the movement gets smaller and smaller until it is no longer physically demonstrated. It still exists inside, even though it may be reduced to only a slight degree of muscular tension. Although we are not always aware of it, we still use this internalized movement to think conceptually. Even Einstein (cited in North, 1973) noted that he made his discoveries initially through visual and kinesthetic images of movement: he saw or felt an idea first, and the words came later.

Dance as an Art Form

While dance is a way of moving and learning, it is also more than that—it is a form of art. Dance is like other arts in that it uses symbols to express ideas and feeling; these symbols do not translate directly into everyday words, but

create or embody that which the artist wishes to communicate. Each art is unique in the materials used to make it. The dance artist uses human movement.

Of course, young children use movement every day to express ideas and feelings. They point to something they want, or may hit or throw something if angry. However, just using movement for expressing oneself does not make the movement dance.

The most critical requirements for making expressive movement become art are intent, form, and awareness. *Intent* means that the movement is chosen by the dancer—not necessarily preplanned, but under the dancer's own control. Young children do not ordinarily plan their movement choices ahead of time, although certain parameters may be given before the dance begins. They usually create their dances as they go along, a process that dancers refer to as improvisation. Improvised movement is still chosen by the dancer—at the moment it is being created.

The artistic *form* that a dancer or choreographer creates may be very complex. On the most basic level—that which is appropriate for young children—dance form involves a beginning, middle, and end. Thus, the dancing is separate from not-dancing, and any one dance has a sense of wholeness.

Awareness means sensing oneself moving. For example, walking may be used as dance movement, but the dancer senses the feet as they contact the floor, with lightness or strength, lingering or with quickness. This kind of awareness is the magic that transforms any particular movement into dance movement.

Awareness in dance comes primarily from the kinesthetic sense, with the auditory sense and the visual sense also having an influence. The kinesthetic sense involves the nerve endings in joints and muscles. This sense tells us what our bodies are doing—even with eyes closed, we know if we are upside down or have an arm held out to the side. The auditory sense is used in dance to respond to sound stimuli, including music, but is not essential; hearing impaired persons can also dance. The visual sense is used in watching other people dance. While dance education for older students includes creating group dances and increasing opportunities to watch others dance (in the classroom as well as in more formal settings), dance education for young children primarily involves each child dancing his/her own dance. Because of this, visually impaired children can participate fully in dance classes in early childhood. Dance education for young children is primarily concerned with developing awareness of the self in motion and in stillness, using the kinesthetic sense.

Art is widely recognized as involving both creativity and skill. To dance on the most basic level requires very little skill, making this art accessible to everyone. However, as in other arts, an increase in skill generates more possibilities, and inability to develop one's skills may result in frustration. Skill in dance includes movement skills, thinking skills, and social skills. Many of the skills involved in dance are also important in other parts of life—for example, how to use free or controlled movement when required, to adjust one's speed, to communicate an idea or feeling to someone without using words or even to pantomime. These skills are among those developed in dance classes for young children.

Creativity, too, is important in other parts of our lives. While it is possible to dance using little if any creativity, by merely imitating another person, the

incorporation of creativity greatly expands the possibilities for enhancing the art as well as the life of the individual. This is one reason that creative activity is always recommended in any educational dance setting.

Moving with intent, form, and awareness, using skill and creativity, help dance to occur. However, these characteristics are still not sufficient to describe all that happens when movement becomes art. The term *aesthetic experience* is often used to describe the most elusive ingredient. Aesthetic experience involves a number of characteristics, but most apparent is a sense of deep connection and engagement—so much so that we may lose track of time and space, feeling as though we are in "another world." It is difficult to talk about such experiences, because the words do not seem to make sense in a conventional way. Children may or may not use words to let us know what such moments feel like to them. Sometimes they have no words to express the power they feel, yet their deep involvement tells us that they have transcended the here and now. Sometimes they speak poetically, as did the 7-year-old who said that in her dance she felt quiet, like walking in the snow, but she was able to see the spaces between the snowflakes and was dancing there. One can never make such transcendent experiences happen. However, it is possible to facilitate aesthetic experience in dance education. It helps to approach movement and stillness with a sense of wonder—as something worth paying attention to, in the same way we pay attention to a delicate flower or a breathtaking waterfall or an interesting rock formation.

In addition, if anyone is to become totally involved in a dance experience, the dance must feel like it is their own. This implies that dance education should be student-centered in the sense of incorporating and relating to the ideas and feelings of the students. Only then will they believe in their abilities to experience both the skill and creativity inherent in quality dance education.

Creative Dance

There are many ways to teach dance, and many kinds of dance to teach. Creative dance* is both a kind of dance and a way to teach, an open-ended approach which encourages flexible thinking, problem solving, and taking risks within a safe environment. It is the most developmentally appropriate form of dance for early childhood education, relating to the child and her or his world in multiple ways.

Creative Dance Uses the Child's Own Movement

Creative dance uses movement children do every day—such as walking, running, galloping, shaking, turning, rolling—rather than special dance steps. However, it does much more than give children opportunities to move; it also helps children become aware of their movement. Awareness facilitates a fuller development of movement quality and skills. Naming particular actions and adjectives that describe them help children learn verbal language as well.

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* The term *creative movement* is sometimes used instead of creative dance, because of objections by some individuals and groups who have different ideas about the definition of dancing. We prefer *creative dance* because it more clearly indicates that the movement goes beyond finding ways of moving creatively to become an art form.

The everyday movements of creative dance are the foundation for dance steps that are used in specific styles such as modern dance, ballet, or tap dance, which may be appropriate for children ages 8 and older. Beginning study of specific dance styles earlier may hinder a child's creative development in dance. Creative dance is the appropriate beginning for those children who will eventually study a specific dance form. However, creative dance is important for all young children, regardless of their future plans involving dance.

Creative Dance Relates to the Life Experiences of Children

Through themes and images, creative dance relates to the concrete life experiences of the child. For example, class themes may relate to the changing seasons; field trips to such places as an ethnic foods store, a farm, or a post office; natural objects or events in the child's locale; animals they know; or special occasions that the children celebrate. Each theme is translated into movement concepts which generate movement activities.

For example, children may observe leaves in the fall, particularly their shapes and the ways they move when they fall off the tree and get blown by the wind. With the guidance of the teacher, young children can then explore making shapes with curves, points, and holes, and find in themselves that which they share with leaves. They may explore suspending, floating, and drifting as they travel through space and come to rest on the floor. They may explore the life cycle of the leaf, from its bud to its return to the earth. As another example, children might explore the kind of movement inherent in a variety of different toys. Mechanical toys, such as robots, have movement qualities quite different from the world of nature. Simple toys, such as balls, balloons, tops, and rag dolls, also offer exciting movement possibilities (bouncing/rolling, expanding/contracting, spinning, collapsing).

The purpose of these experiences is for children to find their own movement possibilities, rather than imitating the teacher, and to develop awareness, finding connections with their world. Children bring their own world with them—their own family and their own culture—and these can be shared with others through dance. Creative dance is not an isolated activity within the curriculum. Connections are also facilitated through the use of poetry, pictures, sound and music, stories, and props. Children draw and/or write about the same ideas they dance about, facilitating an integrated, thematic curriculum. For example, an exploration of the movement involved in bread baking (sprinkling, stirring, rising, punching) might be initiated or enhanced by a child whose parent bakes bread, a class baking experience, a trip to a bakery, or a story about a child in a bakery. Children might create a story or a painting, as well as a dance, in response.

Creative Dance Incorporates Each Child's Ideas, Feelings, and Fantasies

Creative dance makes a place for each child's ideas, feelings, and fantasies. For example, children may be asked to find their own way to walk or their own shape in which to start. As a group, they may create a magic land where people can only travel backwards, or can move low and high but not in-between. They may be asked to make a large wiggle and then a very small one, and then to invent a creature that does both, making its own wiggle dance, accompanied by a wiggling sound. Such activities quickly go beyond the identified boundaries

of dance, as children create pictorial and sound representations or even make a play about the problems a "wiggle-ator" might encounter in the world. This may lead to a discussion of the difficulties some children experience in being different.

Creative dance also gives validation to feelings and an opportunity to be expressive when words are not adequate. A child may find ways to translate feelings into a dance, perhaps loneliness from being left out, or joy about a birthday party.

Movement Elements Used in Creative Dance

The content of creative dance includes dance skills and concepts appropriate to the psychomotor, affective, and cognitive development of the students. Skills (what children can do) and concepts (what they know) are not entirely separate. In creative dance, a large number of skills and concepts revolve around what are usually referred to as the movement elements. While these elements may be categorized in a variety of ways, they include those listed below.

The Body

Basic body actions.

- Some basic actions travel through space, such as run, walk, gallop, and skip. A term often used to describe these actions is *locomotor*; young children may learn them as "traveling" movement or movement that "goes somewhere."
- Some basic actions stay in one place, such as bend, twist, stretch, or shake. These actions may use the whole body or particular body parts. (We can shake one arm or the whole body.) A term often used to describe these actions is *nonlocomotor* or *axial*; children may learn to describe them as movement that "stays home."
- Some action words actually refer to stopping the action, such as *freeze*, *stop*, and *perch*. Learning to stop one's own body is as important as moving.

Body shape. Examples of body shape include big and small, curved and pointed, curled and stretched. Some shapes have holes, which dancers refer to as *negative space*.

Space

Space as a movement element has to do with where the body moves.

Place

- Personal space is the space which the dancer occupies in moving. It is sometimes helpful to imagine personal space as a "space bubble" around oneself.
- Shared space is the open space not being occupied, into which any dancer can travel.

Direction. Direction may refer to the room (moving towards the front, back, side, or corner) or to the dancer's body (moving forward, backward, sideways, diagonally).

Level. The element of level refers to movement that occurs in low space (close to the floor, such as slithering), high space (such as walking tall, tiptoeing, and leaping), or in the middle.

Range or Size. Movement may be large (taking up a lot of space) or small (taking up very little space) or in-between.

Pathway. Pathways may be created on the floor, as when running in a figure eight pattern. They may also be created in the air, as when the whole body goes up and down to make a zigzag pattern while traveling, or the arm draws a circle to create a circular pathway.

Time

Speed . The speed of a movement may be fast or slow or in-between, and may be even (steady) or uneven.

Duration. Duration in dance refers to how long a movement lasts (a short time, a long time, or in-between.)

Rhythm. Rhythm in dance refers to the arrangement of short and long movements to create patterns. Young children can identify clear and simple rhythm patterns that they hear and reproduce them in movement.

Energy

Tension. Movement may be tight and hard or soft and relaxed or somewhere in-between.

Force. Movement may be strong and forceful or light and gentle or somewhere in-between.

Relationship

As we move, we may create relationships between body parts or with other dancers or objects in the space. For example, we may move toward or away from, around, over, or under; we may use similar or different degrees of speed or force; we may mirror or shadow the movement of another. We also create relationships by using focus, that is, by looking at something. Relationship may also refer to the way we interpret other ideas in movement, such as when we move as though blown by the wind or as though we were walking in molasses, or take on the shape of an object as our own.

Variations of natural movement are created through use of the movement elements. As children are developing a movement vocabulary dealing with these elements, they are also developing their verbal vocabulary. The words take on meaning for children through the concrete experiences involved in creative dance. These early experiences and the vocabulary that arises from them lay the groundwork for later experiences in abstract thinking. In dance, abstract thinking includes analyzing dance and discussing it critically.

However, movement elements alone are insufficient to make dance. It is what we do with movement that turns it into dance. In creative dance, children use the movement elements in a creative/expressive way, with intent, awareness, and form, using their own creativity and skills, making their own dance. This transformation happens because of how the dance content is taught.

A creative dance class is more than a collection of movement activities; it forms an aesthetic whole similar to the way a work of art is an aesthetic whole. A theme and an underlying structure are necessary to make the class a whole. The theme in early childhood classes comes from the child's world or is something the particular group of young children care about, such as dinosaurs, butterflies, or birthdays. This use of theme allows creative dance to be fully integrated within the early childhood curriculum; the theme itself then becomes part of the learning content.

The Class Structure

It is the teacher who creates the structure for creative dance, and the children who elaborate upon it. It is the teacher's job to help the children's ideas work as dance. A basic outline for the structure consists of four steps (the examples given relate to a theme of thunderstorms, which might be part of a larger classroom unit on weather):

- Based on the theme, the teacher either presents an idea for dance (such as clouds), or elicits an idea from children ("What do you see in the sky before a thunderstorm?" "What are clouds like?" "Are they soft like cotton or hard like blocks?") Using the contributions from children, the teacher translates the idea into movement terms. For example, if children say "Clouds are puffy," the teacher might ask if the children can make soft curved (i.e., puffy) body shapes.
- Guided by the teacher, the children explore the idea and discover its possibilities in movement. The teacher may suggest possibilities. ("Can you make a curved shape with your mouth? How can your arm curve?") However, the goal is to encourage children to generate their own possibilities. The teacher affirms and accepts the possibilities offered by the children, because all solutions are correct. The teacher can extend the possibilities of the children's movement ideas, helping them beyond the first level of response. ("Karen is making a low curve. Try making low curves and high ones. Jose is letting his curve float.... Can you let your curve float to a new spot? What happens when your cloud shape meets another cloud shape? Find ways to move softly over or under someone else's shape.") Pointing out different examples helps children to appreciate each other's work and to value similarities and differences.
- Using the children's ideas, the teacher structures or forms a dance with the children. A dance has a beginning, a middle (which usually changes or evolves in some way), and an end. (For example, "Start in a soft curved shape on your home spot, float to a new spot and make another curved shape, float back to your home spot and freeze in another soft curved shape.") With more experience, children become able to structure their own dances.

- The children do their dance one or more times. This stage of doing involves full energy and concentration. Young children may share their dances with each other. (Dancing on a stage for a formal audience is inappropriate for young children.)

Children also learn how to be a good audience during the early childhood period, as they informally share their dances with each other. They learn to watch each other with attention and respect. Through modeling and skillful questioning by the teacher, they also begin giving verbal response in respectful ways. ("I liked the part when Keisha floated down and rolled over and came up, without ever stopping her movement; it looked smooth. Tell me one moment in the dance that you especially noticed.")

This basic class structure is adapted according to the age and developmental level of the child. For 3- to 4-year-olds, the class consists of a number of different ideas related to the theme, each explored individually, because children this age can deal with one concept at a time. The next dance might be about lightning, using angular shapes that change suddenly. Another dance might be about rain falling lightly or with strength, translated into light and strong running steps.

For 5- to 6-year-olds, there will be fewer dances within each class, but there will be two to three ideas within each dance. (A single dance might start with soft curved shapes traveling across the floor, then freezing into stillness, getting tighter and tighter and then exploding into a series of sudden angular shape changes.) By the time children are 7- to 8-years-old, they will be able to build to one dance by the end of the session, incorporating more skills and concepts. Children ages 7 and 8, especially those who have danced for a year or more, may respond to their dances and the dances of classmates with particular suggestions, and then may revise their dances. They may also create or learn dances which can be repeated.

To the basic structure outlined above, the teacher adds transitions from the previous activity and into the activity that will follow the dance session. Many teachers use a warm-up as a part of the initial transition, although active young children do not need the kind of warm-up necessary for adult bodies. Many teachers use relaxation at the end of a dance session before beginning another activity.

A variety of skills and concepts is included within each session; eventually, all are included. Rather than only learning one at a time, and staying with it until perfected, children return again and again to traveling in different ways, making their own shapes, changing their speed and their pathway and their force, gradually increasing their understanding, and refining their skills.

The Class Environment

In order for this structure to work to create dance, a positive environment must exist in the classroom—one in which the child feels affirmed, nurtured, and safe enough to take the risks necessary to explore, create, and learn. Establishing this kind of environment involves the same considerations that are necessary for learning to occur in the early childhood classroom in general, with slight modifications for dance. These include a safe environment and a supportive relationship.

Assuring a Safe and Orderly Environment An open space free from hazards, and large enough for the given group of young children to move without collisions, is a necessity. The number of children that can be taught in one group depends on the developmental level of the children.

Since young children may have difficulty understanding rules, it is most helpful to limit rules to those that are absolutely necessary and to enforce them consistently. Children need to learn to respect the personal space of others (i.e., avoid collisions) and the feelings of others (i.e., don't make fun of others) and to stay inside the boundaries of the dance space if the whole room is not being used. They also need to learn to respond to a certain signal that means "stop, look, and listen." With guidance from the teacher, groups of children may generate some of their own rules.

A high level of noise usually blocks aesthetic experience. Yet young children need to talk to develop language skills, and constant demands to "be quiet" are not satisfying to anyone. Use of quiet music and quiet voices are helpful. It is also effective to teach children that there are appropriate times and places to make sound and to make silence, and to cultivate an appreciation for the magical quality of silence.

A safe environment also means appropriate attire, such as clothing that allows for freedom of movement. Bare feet are preferable to shoes or sneakers, both for purposes of safety and sensory awareness. If children are uncomfortable removing shoes, it is wise for teachers to be sensitive to reasons and not force the issue with young children; psychological safety is also important. However, it is unsafe for children to wear socks or tights without shoes unless they are on a nonslippery carpeted surface.

To facilitate an orderly environment, the teacher has all necessary materials (such as music and props) ready and easily accessible. This will help minimize wait time, which young children will find other ways to fill, often with disruptive activity.

The teacher should reinforce appropriate behavior, with expectations geared to the developmental level(s) of the children. All participants (adults and children) need to treat each other with respect; this includes disruptive children.

It is helpful for the teacher to allow for different levels and types of participation, particularly in the case of 3- to 5-year-olds. The options range from very limited participation (observation only) to being fully active. Children who are not yet ready to participate in the group activity often absorb a great deal by watching. The physical environment needs to provide a place for children to watch without distracting others, and the teacher needs to invite participation without forcing it.

Building a Supportive Relationship. It is important for the teacher to have a personal connection with each child. This means that, in cases where there is a specialist teaching dance, the schedule allows the teacher to have sufficient contact with each group so that he/she can know each child, including the child's name.

It is necessary for the teacher to use language and present activities which are developmentally appropriate and are inclusive in terms of race, gender, culture, and other differences. In order to help children appreciate both individuality and community, both differences and similarities need to be

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celebrated. These include physical similarities and differences as well as ideas that are different or related. Both the distinctly individual responses of children and those that connect them to others can be encouraged verbally and nonverbally. Descriptive comparisons are usually preferable to those that invite competition. (For example, "Kente is making a wide shape; Kim's shape is very small" instead of "Good shape, James" or "Maria had the highest jump.")

The relationship between the teacher, the children, and the subject matter is further enhanced by the teacher's full and active participation. This does not mean demonstrating for purposes of imitation; it does mean adding energy to the experience by using voice and body (including facial expression) to reflect the movement qualities desired. For example, the teacher's use of a soft voice helps children achieve lightness; using a strong body stance and voice helps children find their own strength.

Summary

These guidelines represent only a beginning for thinking about dance in early childhood education. They were adapted from a longer document, *Guide to Creative Dance for the Young Child* (Stinson, 1990). Readers interested in implementing a dance program for young children are invited to consult this document and the references it includes.

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VI

Educating Young Children About Health

David M. Macrina, Ph.D.

Introduction

In considering the best approaches to health education for young children, it is important to first define health education. This will help more accurately identify what constitutes health education in preschool, what health education can accomplish, and what types of health education resources are best.

Health education is a designed combination of methods which facilitates voluntary adoptions of behavior conducive to health (Green & Kreuter, 1991). In other words, health education is a planned attempt to help another make sound health decisions. This may apply to several areas, including diet, exercise, safety, and many other personal health topics. With preschool children, as with other age groups, health education is focused upon influencing the individual's beliefs that he/she can do things to be healthier now and in the future.

Many of the concerns of health education apply across the age groups. As in educating adults for health, education for preschoolers needs to deal with issues which are relevant and presented in terms which are understandable. We should note that in deciding upon important health issues such as what to eat, that the individual's cultural background may play an important role in defining proper and expected behavior. Similarly, socioeconomic status may impose limitations in putting recommended health knowledge into practice. For example, one might question the value of teaching children the importance of car safety restraints if their families cannot afford a car seat or a car which has seat belts.

Why Preschool Health Education Is Important

A frequent question of preschool education is what can we really accomplish at this early age and developmental level? Educating adolescents about the health hazards of smoking seems logical in terms of the health decisions which they make, but is this as reasonable for preschoolers? Can we really expect that early health education can be beneficial?

Consider what health education research suggests concerning the impact of health education on children, particularly those of preschool age. Health education research notes that comprehensive and systematic health education for children has a positive impact in several areas of health behavior. These areas include diet, exercise, drug taking, and safety and accident prevention. A recent study found significant differences in knowledge, attitudes, and behaviors among elementary school children who experienced a comprehensive health education program beginning in kindergarten versus those not exposed to such a program (Metropolitan Life, 1989).

Several researchers have noted specifically the benefits of health education for preschool children. Gochman (1976) notes the preschool years as a time conducive to promoting changes in health beliefs. McCormick (1976) stresses that the 2- to 3-year age group is a prime age for health education to begin, particularly due to the fact that preschool personnel have access to both young children and their parents. Studies show preschool age children are able to grasp basic health concepts such as contagion and spread of disease (Siegal, 1988). However, other researchers note that young children have difficulty understanding the idea of health and disease causation (Byler, Lewis, & Totnak, 1969).

The belief that it is easier to encourage healthy habits during initial behavior development than to alter existing health behaviors is repeatedly noted by health education specialists (Vance, 1973). An additional benefit of health education among preschoolers is the potential to improve health knowledge, attitudes, and behaviors of parents and program staff (Hendricks, Echols, & Nelson, 1989). Several additional studies indicate that the preschool years are critical in relationship to learning and the formation of behavior patterns. Some authors have concluded that health education programs in preschool can enhance the interaction between health care providers, parents, and the preschooler (Hanson & Levine, 1980).

Content of Preschool Health Education

Let us examine the alternative structures of health education offerings in schools. This is important when selecting the program which might be offered and its implications in terms of time, cost, and potential effectiveness. There are four general approaches to structuring health education in a school environment: (a) specific problem/topic orientation, (b) body systems approach, (c) content area, and (d) conceptual approach.

Specific Problem/Topic Orientation

The perceived need for health education often focuses on specific problem/topic areas such as drug use prevention, fire safety, or smoking. The content development of preschool health education programs has paralleled to some degree the evolution of elementary and secondary health education programs. Many health education programs initiated in schools have been generated in response to current topical health problems of concern. These programs are often developed in the hopes that education interventions will help to combat

a problem of immediate concern. For example, the current proliferation of AIDS education and drug education efforts reflects the trust and expectations which society has for education for health. Within preschools as well, one can find health education programs and resources offered which are specific health topic/problem oriented. However, health education as a specific topic/problem-oriented program is limited in its effectiveness to influence health behavior and health decision making. Specific health problems and behaviors of concern are more effectively approached when covered in a comprehensive health education curriculum. This comprehensive approach to health education necessitates a planned systematic curriculum. The comprehensive approach attempts to integrate properly the scope and sequence of the curriculum. These terms refer to the variety and depth of material presented (scope) and the proper order of presentation (sequence).

Body Systems Approach

A second basic approach for a health education program is to focus upon the structure and care of the human body. This so-called "body systems" approach usually focuses on a separate body system at selected grade levels. This design features one body system at a time while attempting to show how each system is interrelated. This structure served as the framework for the *Primary Grades Curriculum Project* (1980) and the *School Health Curriculum Project* (1977), as well as for the subsequently developed *Growing Healthy* (1985) program.

Content Area Approach

Traditional school health education areas of study tend to be structured around broad content areas. While the specific areas may vary somewhat, the basic content divisions usually include:

- Personal Health
- Family Health
- Nutrition
- Mental and Emotional Health
- Use and Misuse of Substances
- Prevention and Control of Disease
- Community Health
- Accident Prevention and Safety
- Environmental Health
- Consumer Health

Conceptual Approach

The fourth approach to structuring health education in the school environment is the conceptual approach. This approach uses broad concepts to structure a given area of subject matter. The conceptual approach develops the scope and sequence of the subject matter from these concepts. For example, consider the concept "Growing and developing follows a predictable sequence, yet is unique for each individual" (*School health curriculum*, 1977). The suggested benefit is that the meaning of the concept can serve as a unifying

theme throughout grade and age levels, integrating proper scope and sequence. This approach requires significant planning and skill for successful implementation.

Within preschool health education, programs have been structured to utilize either one or a combination of the approaches previously mentioned. A description by Parcel, Bruhn, and Murray (1984) of early health education programs for preschool children notes that most organized health education has been carried out through Head Start. Other efforts include a program which utilized a clown show to teach health behavior (Haikal, 1969), the *Health Education Curriculum Guide for Head Start* (Harrison, 1971), and *Head Start on Health* (Nelson, 1975). Parcel goes on to note the program *The Web of Life Health Education Activities for Young Children* which incorporated expected learner outcomes and age appropriate learning activities.

A more behavioral-oriented curriculum was developed by Parcel, Bruhn, and Murray (1984), who describe it as designed "to teach selected, age appropriate types of behavior that enable children to assume greater responsibility for their own health." Their Preschool Health Education Program (PHEP) was further designed to enhance the child's self-confidence about performing types of behaviors, while developing a belief that such behaviors are important and that they have some control over their own health and safety.

The *Hale and Hardy's Healthful Hints* preschool curriculum developed by Hendricks and Smith in 1983 was a comprehensive health education curriculum designed for Head Start preschoolers. The curriculum was based on the 10 health content areas recommended by the Education Commission of the States (listed previously.) This curriculum contains 27 learning objectives with 10 instructional activities for each objective. The design of the curriculum incorporates activities which are structured to facilitate learning of health concepts. The activities additionally attempt to teach skills in the area of fine motor development, gross motor development, language development, social development, cognitive development, and self-help. The teachers for the curriculum were trained in curriculum implementation workshops which instructed teachers in the use of the curriculum units and activities. To assist in ease of implementation, curriculum activities were modification of games and activities with which the teacher was already familiar. Evaluation of the impact of this preschool curriculum noted an increase in children's health knowledge upon expose to the curriculum (Hendricks, Echols, & Nelson, 1989).

This particular curriculum has been revised and updated by Hendricks and Smith (1991) and is entitled *Here We Go, Watch Me Grow*. It is one of two comprehensive health education curriculums known to be currently available. The other curriculum is entitled *I Am Amazing* (1990). Other preschool health education materials related to specific topics also exist. Voluntary health associations, such as the American Cancer Society and the American Heart Association, have produced materials specifically for preschoolers.

Choosing a Preschool Health Education Curriculum

Teaching health education within the preschool is beneficial for children, parents, and teachers as noted earlier. It is important, however, for the teacher to carefully plan what he/she wishes to accomplish before implementing a specific unit or total curriculum. The variety of health education materials available for use in preschools differs significantly in terms of subject, scope, how they are used, resources provided, and cost. The following questions are included to help in selecting a health education teaching resource which meets the needs of specific children and programs. They are meant as an aid in evaluating curricula.

Does the Curriculum Need Additional Resources in Order to Be Used Properly or Are All the Necessary Information and Supplies Included?

The word *curriculum* is often used to mean many things in describing educational products. Curriculum packages may include only the basic information for implementation or may include additional resources which enhance the implementation. For example a basic curriculum may only contain the written information describing goals, objectives, content, and activities, other curriculum packages may come complete with all additional resources (e. g., videos, educational resources, transparencies) which a teacher might wish to employ in utilizing the curriculum effectively. *Be sure to know what you are buying.*

Is Special Equipment Needed to Utilize the Curriculum Properly?

Curriculum packages may place a special emphasis on a particular educational medium. If, for example, a video is included in a curriculum and serves to provide the teacher and/or student with supplemental information, it may not be critical if the preschool does not have a VCR and monitor to view the video. If, however, the video is the major means of education for the curriculum, the lack of a VCR may render the curriculum useless.

Does the Curriculum Require Teacher Training to Be Implemented Properly? If So, What Is the Nature and Extent of the Training Required?

Some curricula and/or curriculum components are designed to be used "off the shelf." They required little background knowledge or training. Other curricula may presume a significant amount of background knowledge and subsequently necessitate a significant amount of teacher training or self-instruction before the curriculum can be used effectively.

Does the Curriculum Require a Separate Block of Time for Instruction or Can It Be Integrated Within Existing Daily Activities?

Time management is an important aspect of effective teaching. This is particularly true in the preschool environment where the unique characteristics of preschoolers demand the teacher's constant attention. A typical reaction of teachers when faced with integrating a new subject or curriculum component into their already busy daily routine is frustration. Therefore be certain to ascertain the time requirements of any curriculum. Additionally beware of the

nature of the curriculum in terms of whether it is designed to be taught separately or if it can be integrated into other daily activities of the preschool.

What Are the Costs Involved in Obtaining and Implementing the Curriculum?

Curriculum prices can range from no cost to significant amounts of money. In determining the total price of a curriculum, the teacher needs to include not only the price of the curriculum but also any additional expenses which are to be incurred in using a curriculum. Not only equipment but materials which need to be reproduced can add to the cost of using a curriculum. At times items solicited from the children's homes may be needed for particular educational activities, while at other times specific materials may need to be purchased. The teacher needs to have a thorough knowledge of the curriculum to determine the total requirements for working with the curriculum and its subsequent cost.

Is the Content Material Within the Curriculum Current and How Soon Will It Need to Be Updated?

Health knowledge continues to change rapidly. Each day new information surfaces about what we know about our health and how it can be improved. Because of this reality, special care must be taken to select curricular materials which are both timely and accurate. In addition, factors such as fashion styles of characters in visual and subject matter may influence how long the curriculum can be used effectively.

Does the Curriculum Identify Specifically What Is Expected to Be Accomplished by Using It in the Preschool?

Teachers need to identify what they wish to accomplish in the classroom and to examine if the curriculum will succeed in achieving these ends.

Does the Curriculum Provide Specific Learning Objectives for the Students (What the Students Are Expected to Accomplish After Having Completed the Unit or Curriculum)?

Specific goals and objectives within the curriculum should be relevant to the preschooler. Specific goals and objectives not only help the teacher in deciding upon whether or not to utilize a curriculum or specific part of a curriculum, but also help the teacher in identifying ways of determining whether or not the purpose of the educational activity has been achieved.

Does the Curriculum Utilize Age-Appropriate Teaching Methodologies?

Teaching methodologies need to be age appropriate. A curriculum whose major methodology consists of a series of how-to lectures by the teacher may be accurate in terms of health content but be totally ineffective for preschoolers. Health education, like other areas of preschool education, needs to employ teaching methodologies which take into account the learning styles and capabilities of preschoolers.

Does the Curriculum Actively Involve Students in a Participatory Role Throughout the Learning Process?

It is preferable to involve students as much as possible in the teaching-learning process. Active participation by the students can enhance the effectiveness of the health education experience by both stimulating the student on several sensory levels (e. g., touch, sight, sound) and by providing activities which can limit potentially troublesome times when students are expected to sit and listen. Direct involvement of the student in an active role provides a means of enhancing the student's perceived self-efficacy. This perception of an ability to perform specific tasks can be a part of a foundation of belief in an ability to influence directly health behavior and personal health status.

Has the Curriculum Been Tested for Its Educational Effectiveness in a Setting and Population Similar to Your Own?

In assessing the potential effectiveness of a curriculum within a particular preschool, it is important to find out if the curriculum has been used in a population of children similar to that of your preschool situation. This information can be obtained by contacting other teachers who may have used the material or by requesting more formal evaluation information from the producer and/or supplier of the curriculum.

Will the Curriculum Form the Foundation in Health Education Which Will Assist Students in Future Health Learning Efforts?

Health education is indeed a lifelong process. The health education efforts of the preschool should assist in providing learning opportunities for the students which contribute to their knowledge, attitudes, and enthusiasm for future health learning. These early efforts can be important in enhancing the way in which students perceive their own health and what they can do to influence it.

Is the Curriculum Focused on One Topic (i. e., Smoking, Safety) or a Number of Different Topics?

The teacher should consider the program's particular needs in deciding between a single topic or more comprehensive program. Comprehensive approaches provide the advantage of integrating subject material between topics.

Does the Curriculum Focus on One Aspect of Health Education Learning (Knowledge Acquisition) or Attempt to Influence Several Areas (e. g., Knowledge Acquisition, Health Behavior, Motor Development, Communication Skills)?

Health education has historically focused a significant amount of effort on helping individuals to gain more information about a particular health topic. The hope has been that the more knowledge a student has about a specific health topic, the more likely that the student will make health decisions that are beneficial to his/her well-being. If Billy knows that germs can be carried on his hands after going to the bathroom, then he will decide to wash them after using the toilet.

Health education research has demonstrated that influencing behavior is more complex than merely supplying information. A person's attitudes and beliefs, as well as other factors, combine to influence health behavior decision making. The teacher examining a curriculum for potential use should review its goals and objectives to determine exactly what is expected to be accomplished by using the curriculum. Are the goals and objectives focusing on only one area of student development (i.e. knowledge) or do they relate to other areas of expectation as well as skill development behavior. In more precise terms, does the curriculum state in its goals and objectives that as a result of the curriculum (a) the student shall know why it is important to brush his/her teeth after each meal (knowledge), (b) the student will be able to demonstrate how to brush his/her teeth effectively (one-time behavior), or (c) the student will brush his/her teeth after each meal during the first month following the education unit (long-term behavior).

Does the Curriculum Concentrate on Traditional Health Topics (i. e., the Heart, Breathing, What Is Healthy Food) or Does It Also Cover Additional Health Topics Such as Violence Prevention and Death and Dying?

The scope of a curriculum dealing with the wide variety of topics in a comprehensive approach to health necessitates the inclusion of subject matter beyond the traditional "wash your hands" health and hygiene lecture. The teacher needs to determine to what extent to include health topics beyond the limited topic of basic hygiene.

Is the Curriculum Sensitive to Differences in Race, Religion, and Ethnic Background of All Students?

Health beliefs, values, and behaviors often reflect the cultural and religious heritage of the family. For example, what a person's diet is composed of and when they choose to eat may be just as much a function of family background and practices as it is a function of knowing what composes a healthy diet. Today, health curricula need to be aware that students within a preschool may represent many families of diverse cultures and religious preferences. The teacher should examine the curriculum carefully to determine if educational content might conflict with cultural or religious values or be regarded as offensive by the families of preschoolers.

Is the Curriculum Sensitive to the Variety of Social, Economic, and Family Structure Backgrounds of the Students?

Preschool populations will reflect the diversity in social, economic, and family structures from which they are drawn. Teachers should examine potential curricula to identify whether role models which are depicted and situations which are portrayed are representative of this diversity.

Does the Curriculum Involve Parents in the Teaching of Health Education? If So, in What Role?

The teacher should note the degree of parental involvement in health education suggested in the curriculum. Active involvement by parents in discussing with their children health topics dealt with at preschool helps children to apply information about health to their own home environments. For

example, a health unit discussing things which might be dangerous around the house provides an excellent opportunity for parent and child to look around their house together to point out dangerous items. If such activities are not provided within the curriculum, the teacher might wish to develop such materials. A health information bulletin board which contains health information for parents can be another unifying piece of a health education program which actively involves teacher, student, and parent.

Does the Curriculum Deal With Subject Matter Which May Be Perceived as Controversial (e.g., Sexuality, Sexual Abuse, Death and Dying, AIDS, Peace, War and Violence)?

Health education topics often include sensitive and controversial subject matter. Teachers should take special note of curriculum areas which may include material which could be perceived as offensive or undesirable by parents. Where topics such as sexual abuse, death and dying, drugs, and AIDS are controversial by nature given their subject matter, the teacher should also be aware that other seemingly less sensitive areas, which are more commonly taught in the preschool, such as nutrition, can be a source of debate as well. The teacher needs to ascertain policies of the preschool related to subject matter taught. Parental involvement is essential.

Does the Curriculum Respect Community and Family Values?

The subject of health is one which goes beyond the walls of the classroom and extends into the community and home of the child. The health teacher needs to be particularly sensitive to the role which community and home values play in shaping health behavior. It is not unusual to encounter a wide variety of beliefs and values concerning how the health of children can be fostered. Presenting certain living circumstances as ideal in a health education context can be confusing to the child. Therefore the teacher must make a particular effort to respect community and family values in developing health education activities.

Summary

Health education for preschoolers is an exciting area which holds a great potential for the developing health of children. Choosing a health curriculum which best fits the needs of preschoolers will help to provide a program which serves as a basis for enhancing the quality of life for students.

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Individual Differences

VII

The Impact of Public Law 99-457 on Health, Physical Education, Recreation, and Dance

Jerry Aldridge, Ed.D.

Introduction

New challenges face the fields of health, physical education, recreation, and dance (HPRD) in serving disabled children ages 3 through 5. The purpose of this chapter is to provide information about Public Law 99-457 which mandates service to preschool disabled children. Children entitled to services under this law may be served by HPRD professionals. How this law affects the preschool age population, general challenges to expect from the law's provisions, and specific challenges for HPRD professionals will be described in this chapter.

Public Law 99-457, the Education of the Handicapped Act Amendments of 1986, was passed by Congress to improve the quality of early intervention services for preschool disabled children ages 3 through 5, with incentives for serving children at birth through age 2. This law extends the provisions of Public Law 94-142, the Education of All Handicapped Children Act of 1975, which was originally intended to serve all handicapped individuals between ages 3 and 21. However, Public Law 94-142 did not require individual states to provide services to disabled preschoolers if a state did not serve nondisabled preschool children. Public Law 99-457 offers funding and incentives to all states and territories that will provide services for preschool children in the least restrictive environment.

Public Law 99-457 has several distinct qualities: de-emphasizing categorical placement, requiring family participation, stressing collaborative efforts and interdisciplinary services, creating an interagency system, and requiring mainstreaming. Each of these requirements will be described briefly.

Generic Classification

Many states under Public Law 94-142 identified children by categories based on federal guidelines and definitions. For example, children received labels under such classifications as mental retardation, learning disabilities, emotional handicaps, multihandicaps, and other categories. Public Law 99-457 de-emphasizes categorical placement by requiring states to adopt their own definition of developmentally delayed for determining eligibility of children to be served by the law. Some states have chosen to serve only the profoundly

handicapped while others have included biologically or environmentally at-risk children as those who are eligible for service.

Family Emphasis

The essential role of the family is stressed in Public Law 99-457. Families are considered important members of the assessment and implementation team for their preschool disabled children. Family training and counseling are also provisions of the law. The Individual Family Service Plan (IFSP) must be developed by a multidisciplinary team which includes the parents and is reviewed at least every 6 months.

Interdisciplinary Services

Collaborative efforts are required and specified. Interdisciplinary services include health services, early assessment, medical services (for diagnosis only), case management, psychological services, physical therapy, occupational therapy, audiology and speech pathology, special education, family training, and home visitation. Not all of these services may be needed by each identified child, but any of these which are needed are provided for through the law.

Interagency System and State Requirement

Each state is required to assemble an Interagency Coordinating Council to implement Public Law 99-457 for that state. According to Safford (1989) "the state agency responsible for coordination does not have to be the state department of education but may be any appropriate agency so designated by the state, such as the department of health." Each state is also required to comply with the following 14 requirements in order to ensure appropriate programs for identified children and their families:

1. Develop a state definition for developmentally delayed.
2. Provide a plan for personnel development.
3. Produce and monitor personnel standards.
4. Develop a plan for arranging and contracting with service providers.
5. Designate a lead agency as the interagency coordinating council to monitor and manage the state's implementation.
6. Develop a system for collecting data.
7. Construct a directory of resources, experts, and services.
8. Design and implement a public awareness program.
9. Develop child find procedures.
10. Draw up a payment plan.
11. Implement Individual Family Service Plans coordinated through case management.
12. Provide both multidisciplinary child assessment and family needs assessment.
13. Set a timetable for service provisions to be completed within 5 years.
14. Design a plan for procedural safeguards. (Hanft, 1988)

Mainstreaming

The law requires that disabled children receive all of these services in the least restrictive environment. This means that, whenever possible, these preschoolers should be in regular preschool settings with their nonhandicapped peers. With school-aged children this would most likely mean public schools. Preschoolers, however, might receive services in private or public day care settings or other preschool environments.

How This Affects the Preschool Age Population

Preschool children will be affected by the law through mainstreaming. This means that all children will be served in the same settings. Nondisabled preschoolers should benefit affectively through association with disabled children, while disabled preschoolers should receive an appropriate individually designed experience with specific services, including parent involvement. All of this is to be accomplished while children served by the law remain in as normal a setting as possible.

Nonhandicapped and Handicapped Preschoolers Together

Where are most nondisabled preschoolers found? According to the law, the answer to this question should be the same as the answer to the question, where are most disabled preschoolers found? While this has been true for some time for elementary school age children under Public Law 94-142, this is somewhat new for preschool programs. Day-care workers and Head Start providers will need additional help and support in serving disabled preschoolers along with nondisabled and gifted children.

Affective Benefits for Normal and Gifted Preschoolers

If the law is implemented appropriately, there should be attitudinal benefits for nondisabled and gifted 3- to 5-year-olds, who will benefit from learning about disabled children. Disabled children often have more similarities to than differences from nondisabled children. Personnel involved in implementing the law have the opportunity to influence children's affect for the better, particularly since attitudinal change is often modeled from teachers or parents.

Individually Designed Experiences for Disabled Children

Disabled preschoolers should benefit from being around other children and from receiving specialized help, which might include everything from occupational therapy to psychological services. Interdisciplinary team members will work together to implement their services in the least restrictive environment. All of these services will be administered under someone who is a case manager, serving as the child's advocate.

General Challenges of Public Law 99-457

There are numerous challenges to expect in implementing Public Law 99-457. Hanft (1989) has identified four implementation issues: (a) definitions and eligibility, (b) coordination of services, (c) personnel training and shortages, and (d) least restrictive environment.

Definitions and Eligibility

Each state has developed its own definition of developmentally delayed, so a child who qualifies for services in one state may not qualify in another. Also, each state is determining what instruments will be used and specific cutoff scores for eligibility requirements using the adopted definition of developmentally delayed. Who is eligible for services will be a debated issue from state to state.

Coordination of Services

Once a child qualifies for services under Public Law 99-457, the law specifies that a case manager will coordinate the services. In one situation the case manager might be a social worker, while in another it might be the health educator or occupational therapist. Thus, the person designated as case manager will be different from child to child.

Personnel Training and Shortages

Many professionals are trained to work with older children but few are trained to work with preschool children. Teachers, health care professionals, psychometricians, speech pathologists, and others will need training in how to work with very young children (Aldridge, 1990). Currently most states are developing certification programs for early childhood special education, but there are not nearly enough teachers trained in this field to meet the needs of Public Law 99-457.

Least Restrictive Environment

What is considered mainstreaming or least restrictive environment for 3- to 5-year-olds? School-age disabled children are mainstreamed in public school classrooms, but there may not be public school classes for preschool children in some states. Where will preschool disabled children go to interact with nondisabled preschoolers? Day care is one answer but day-care providers are rarely trained in exceptionalities. This challenge is closely related to personnel training, as well as to mainstreaming.

Challenges Specific to HPRD

Challenges of implementing Public Law 99-457 also exist specific to HPRD. These include multidisciplinary evaluation, mainstreaming, consulting and coordinating interdisciplinary services, dealing with parents, and handling absences and/or attrition.

Multidisciplinary Evaluation

Health and physical educators will eventually be part of the assessment team to determine the nature and extent of the participation a preschool disabled child can have in existing programs. What procedures will be needed to determine if a child with cerebral palsy can benefit from a fitness or dance program? What modifications will need to be made for this child? Evaluating the child for such programs is an important part of developing a plan for the least restrictive environment.

Mainstreaming

Which developmentally delayed children will benefit most from which program? A child who attends a regular day-care program or preschool might need special equipment, attention, or services when a motor or health program are implemented. Mainstreaming for movement is often different from mainstreaming for instruction.

Consulting and Coordinating Interdisciplinary Services

Occupational therapists, physical therapists, and case managers are often needed for consultation when planning an appropriate program for a handicapped child. While developing a program is an interdisciplinary effort, it is often the responsibility of the physical or health educator to carry out the program. Continuous consultation may be needed for certain children to provide them with the best physical education.

Dealing with Parents

The Individual Family Service Plan could include a motor program for children, reinforced or implemented by the parents. The health or physical educator will now be training parents to follow an agreed upon program. This is very difficult when parents may be going through stages of grief in coming to terms with the child's limitations or their own perceived inadequacies. Special consideration must be given to dealing with these issues.

Handling Absences and/or Attrition

Preschool disabled children are sometimes absent due to their disabilities. This is more often the case than with nondisabled preschoolers. Interruptions in the program may occur due to the child's visits to the doctor or other specialist. Some handicaps such as muscular dystrophy may result in progressive degeneration of muscle groups. How does the motor educator deal with these absences, regressions, or even deaths of such children? This is an especially difficult challenge.

Summary

Public Law 99-457, the Education of the Handicapped Act Amendment of 1986, is meant to improve the quality of life for disabled preschool children. The passage of the law brings possibilities, challenges, and problems. Health educators and physical educators may need additional training and resources to cope with the demands placed on them by the law.

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Resources

There are two journals devoted exclusively to young children with special needs:

Journal of Early Intervention, Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091.

Topics in Early Childhood Special Education, PRO-ED Publications, 8700 Shoal Creek Boulevard, Austin, Texas 78758-6897.

VIII

Preschool Children with Developmental Delays/Disabilities: Individual Differences and Integration

Claudine Sherrill, Ed.D.

Introduction

Approximately 10 to 15 percent of America's children and youth have problems severe enough to qualify for special education services. This estimate includes children in the age range from birth to 6 years. Recent federal legislation (The Education of the Handicapped Act Amendments of 1986, discussed in Chapter VII) has identified two distinct age groups eligible for early intervention: (a) infants and toddlers, from birth to age 3 years and (b) preschool children, ages 3 to 6 years.

The rules and regulations for service delivery vary for the two age groups, but essentially all children who are diagnosed by a multidisciplinary team as meeting eligibility criteria can now receive special education services at no cost to their families. Thus the mandate for free, appropriate education for all children has been extended downward to encompass newborns with special needs. These services may be delivered in many settings (home, hospital, or center) and imply that physical and health education personnel of the future may be involved in new roles.

Diagnostic Terms

Infants, toddlers, and preschoolers eligible for special services are classified as (a) disabled, (b) developmentally delayed, or (c) at risk for developmental delays. This shows the recent trend away from use of the word, *handicapped*. Today most countries accept the definitions of the World Health Organization (1980):

Impairment—any disturbance of, or interference with, the normal structure and function of the body.

Disability—the loss or reduction of functional ability and/or activity.

Handicap—a condition produced by societal and environmental barriers.

Among preschoolers, *disabled* is the term used to describe children who fit within the diagnostic categories established by the Education for the Handicapped Act (EHA): (a) speech and language impaired, (b) learning disabled, (c) mentally retarded, (d) multihandicapped, (e) orthopedically impaired, (f) emotionally disturbed, (g) hard-of-hearing and deaf, (h) other health impaired, (i) visually handicapped, and (j) deaf-blind. These categories are listed in order, from high to low, according to preschool prevalence estimates. About 75 percent of the preschoolers with diagnosed disabilities fall into the speech and language impaired category, whereas less than 1 percent are visually handicapped or deaf-blind. New diagnostic categories established by 1990 legislation are autism and traumatic brain injury, but no statistical information is available on these conditions for preschoolers.

Developmentally delayed is a generic term introduced in recent legislation to permit states to establish their own criteria as to what constitutes performance significantly below average. Federal legislation indicates that developmental delays can occur in five areas: (a) cognitive, (b) physical, (c) language and speech, (d) psychosocial or emotional, and (e) self-help skills. Statistical criteria are usually established for diagnosis, like (a) functions at 75 percent or less of his or her chronological age in two or more areas, (b) scores at least 1.5 standard deviations below the mean, or (c) scores below the 30th percentile. Two or more tests, with good validity and reliability, are used to make a diagnosis. Other procedures can be used also, such as documented, systematic observation by a qualified professional, parent reports, developmental checklists, and criterion-referenced instruments.

At risk to developmental delays refers to those who "have been subjected to certain adverse genetic, prenatal, perinatal, postnatal, or environmental conditions that are known to cause defects or are highly correlated with the appearance of later abnormalities" (Peterson, 1987). This is because poor development often is not noticeable during the first several months of life. Many children do not evidence clear delays until the end of the second year (Peterson, 1987).

Among the many factors contributing to risk are low socioeconomic status (SES) environments, prematurity and low birth rate, difficult or traumatic delivery, maternal age of under 15 or over 40, a family history of genetic disorders and/or problem pregnancies, and mothers with substance abuse or chronic health problems (Cratty, 1990; Peterson, 1987; Thurman & Widerstrom, 1985). Maternal use of nicotine, alcohol, marijuana, and cocaine during pregnancy is currently resulting in large numbers of multihandicapped infants who exhibit signs of cerebral palsy, mental retardation, and sensory impairment. AIDS or human immunodeficiency virus passed on to infants from infected mothers is still another source of at-risk newborns (Diamond, 1989). These infants generally appear healthy until 6 to 9 months of age, at which time about 50 percent show signs of illness. Some deteriorate rapidly and die, while others live 5 to 6 years.

Diagnostic terms, while necessary to describe eligibility for special services, result in categorization that can lead to stereotyping, stigmatization, and discrimination. In the past, for instance, textbooks often listed physical, mental, and social characteristics of conditions like mental retardation and cerebral palsy. Today, good instructional resources emphasize individual

differences rather than common limitations or weaknesses. Good teaching begins with assessment of individual abilities in relation to specific environmental and task demands rather than assuming certain characteristics and behaviors.

Good teaching also demands sensitivity in describing children. We do not say, for example, that we teach the mentally retarded or that we teach mentally retarded children. Such phrasing implies that the most important fact about the group or individual is limited intellectual capacity. Instead we emphasize the individual rather than the disability by saying that we teach children with mental retardation or individuals who perform below average in problem solving and generalizing. In physical education, we may refer to a preschooler with Down Syndrome as a future Special Olympian, a term that connotes effort and achievement. Consistency in proper verbiage is hard to maintain but necessary to meet the standards set by various advocacy and professional organizations.

Teacher Attitudes Toward Individual Differences

Teachers who work with children who have disabilities or delays are often told, "Oh, you must be very special" or "You must find your work very rewarding." While meant as positive statements, these comments tend to be irritating. They imply that abilities and satisfactions associated with teaching children who have special needs are different from those in regular education. This is not the case. When assessment serves as the basis for goal setting and instruction, all children have special needs. The trend is toward development of good attitudes toward a broad spectrum of individual differences rather than toward disabilities or diagnostic categories.

Instructional Environments

The trend is toward placement of preschoolers with delays/disabilities in integrated classrooms and play settings. When children cannot safely or successfully participate in an integrated environment without assistance, several options are possible. Typically an aide is provided to assist the regular educator in meeting the child's special needs and/or a consultant or resource teacher helps with environmental and instructional adaptations. Sometimes a pull out arrangement is used in which the child leaves the regular classroom for a few hours each week for special tutoring and/or therapy. Every attempt is made to keep children in integrated settings so they can be afforded the same socializing and learning experiences as normal peers.

Special education thus no longer means instruction in a separate setting. Today special education, as well as adapted physical education, connotes a comprehensive service delivery system in which performance is assessed, goals and objectives are established, and instruction is designed and implemented in environments that are considered least restrictive in that services, equipment, and supplies are matched to needs. Appropriate matching eliminates restrictions to learning and development.

When a preschooler is assessed and found eligible for special education, this means that the community and/or school district must find the money to provide the special assistance or adaptations that are needed to achieve his or her educational goals. The multidisciplinary diagnostic team, with the parents' assistance, makes decisions about which services can best be delivered in integrated settings and which require alternative arrangements (Lerner, Mardell-Czudnowski, & Goldenberg, 1987; Thurman & Widerstrom, 1985).

Psychosocial Development of Preschoolers in Relation to Disabilities/Differences

Attitudes and expectations of teachers are major influences in the ways children feel about themselves and each other. The preschool years are a critical period in the formation of body image and self-concept (Sherrill, 1986; Wright, 1983). By ages 4 to 5 years, it is possible to measure feelings about the self in four domains: cognitive competence, physical competence, peer acceptance, and maternal acceptance (Harter & Pike, 1984). To do this, an interview technique with a pictorial instrument is used. The child is shown two pictures at a time; the teacher interprets each picture (e.g., This boy isn't very good at running; this boy is pretty good at running); and then the child is asked to point to the picture most like him or her. This and other assessment approaches show that preschoolers have begun to form definite concepts about both their acceptance and competence.

Research shows that children with orthopedic disabilities become gradually aware that they are different and/or have a disability between ages 3 to 7 (Dunn, McCartan, & Fuqua, 1988; Wright, 1983). Most children in this age range cannot name their disability without prompting but can recognize and identify with the correct condition (e.g., cerebral palsy, spina bifida) when several are stated. However, when asked a more general question like, Do you have a disability (handicap), many preschoolers say no. This indicates that they are aware of specific limitations but have not begun to think of themselves in categories (disabled/not disabled) or as different from classmates.

Most preschoolers feel good about the way they look and what they can do until subjected to repeated negative evaluations. For example, even when aware that arms or legs are different, preschoolers tend to deny difficulty in running or problems in doing things that others do (Teplin, Howard, & O'Connor, 1981). Most children do not begin to make social comparisons until ages 7 or 8. Self-evaluation of physical appearance and abilities thus is strongly rooted in what preschoolers hear as well as in their interpretation of tone of voice and facial expression.

No comparable research is available on preschoolers with speech and language problems and/or mental retardation because data collection difficulties have not yet been surmounted. It seems reasonable to assume, however, that these children follow similar patterns.

Current thinking emphasizes that the preschooler's growing awareness of self as a person with differences, disabilities, or limitations should not be left to chance, which is often both traumatic and cruel. Parents should begin providing general information to preschoolers about their disability at age 3 or

4 (Dunn et al., 1988; Wright, 1983). Typically children ask questions that initiate discussions or become involved in interactions with siblings or peers that require mediation. Responses should be matter-of-fact and stress assets rather than comparisons.

Wright (1983) offers examples of good and bad answers to the question: Do you think I'll ever be able to walk like everyone else?

> *Good*: Probably not, but you are learning to walk better and that is good. And do you know that there are lots of other things you can do? Let's name some of them.
>
> *Bad:* Probably not. But even if you can't walk as well as some people, there are other things that you can do better than some people.

Preschoolers thus should be helped to understand their limitations in a friendly and caring atmosphere. As younger and younger children receive special education services, it is likely that caretakers outside the family circle may have to answer first questions about being different and cope with interpersonal situations in which peers point out shortcomings. Experts favor open discussion of disabilities/differences in front of children and recommend inclusion of units covering individual differences in preschool curricula (Dunn et al., 1988). Emphasis should be on each human being's uniqueness and the importance of supporting and helping one another (Thurman & Lewis, 1979). Children should be helped to see that being different is not bad but simply a chance occurrence. Discussion can center on differences in eye, hair, and skin color; height and weight; the ways people walk, talk, and think; and expressions of individuality in work, play, hobbies, and leisure pursuits. Movement education and creativity training in which emphasis is on "Find another way" or "Show me all the different ways you can do something" are excellent approaches to understanding and appreciating individual differences. Likewise, good teachers stress not being afraid of people, places, foods, and other things that are different but to approach them, assess them, and get acquainted.

Stories like the princess who kissed the frog and turned him into a prince can teach sensitivity. It is important also to emphasize that appearances can be deceiving. Too often Halloween witches and storybook monsters are characterized as physically ugly or disfigured; small wonder that young children without special training begin equating being different with being bad. To counteract these influences, we can devise movement activities that feature creatures who look different but are kind, loving, and lovable. Examples are television and movie characters like Vincent in "Beauty and the Beast," Alf, ET, and the casts in *Star Wars* and *Return of the Jedi*.

Most children with severe disabilities/delays will inevitably be exposed to discrimination and prejudice (Wright, 1983). Preschool experiences should thus be designed to prepare children for difficult social encounters. Storytelling, role playing, and discussion help with learning-appropriate responses to thoughtless and inconsiderate things that others do. A number of books are now available that feature children coping with disabilities. Among these is the *Kids on the Block* book series, available from Twenty-First Century Books, 38 South

Market Street, Frederick, Maryland 21701. Each *Kids on the Block* book describes a child with a different disability (e.g., cerebral palsy, asthma, diabetes, AIDS) who copes in appropriate ways, feels good about self, and interacts with nondisabled children.

The *Kids on the Block* are also available as puppets, although somewhat expensive. Scripts and discussion guidelines come with the puppets, and over 900 community-based organizations are using these materials to increase awareness and improve attitudes (Aiello, 1988).

Preschoolers with disabilities need access to dolls and stuffed animals with and without disabilities. This permits imaginative play comparable to real life situations. Hal's Pals is a line of cabbage patch type dolls with different disabilities (e.g., a skier with one leg, an athlete in a wheelchair, a dancer with hearing aids) that is available through Jesana Ltd., P.O. Box 17, Irvington, NY 10533.

During the years that children are building attitudes toward themselves, parents and caretakers should be careful about the ways they handle broken or damaged dolls and household objects. In America's throw away society, children may develop feelings that they are no good or likely to be thrown or given away by observing such practices. Likewise, the family that puts a sick or injured animal to sleep may contribute to attitudes about right and wrong behaviors in relation to human beings with similar conditions.

Preschoolers, both with and without disabilities, need exposure to older persons with disabilities. Research shows that children in the 3- to 6-year-old age range tend to make no verbal references to the missing leg of an interviewer; this suggests that inhibiting responses to a physical disability occurs in the early years and limits opportunities for direct learning (Somervill, Cordoba, Abbott, & Brown, 1982). Thus, when speakers with disabilities are invited to the early childhood setting, they should explain how they are similar to and different from other people and encourage questions.

Children with disabilities/differences should have the same opportunities for sports socialization as peers. This means they must see persons with conditions similar to their own in athlete roles both in integrated and nonintegrated sport settings. For attitude development, nondisabled preschoolers should also be exposed to athletes with disabilities. All young children should thus be taken to sports events like Special Olympics, wheelchair basketball and tennis, and cerebral palsy handball and boccie. Real life experience of this kind should be supplemented with films and videotapes (Sunderlin, 1988) and magazines like *Sports 'N Spokes* and *Palaestra: The Forum of Sport, Physical Education, and Recreation for the Disabled* that feature athletes with disabilities.

Social rejection and avoidance of children who are different begins to occur at about age 4 unless there is intervention to promote interaction and acceptance (Siller, 1984; Weinberg, 1978). Research suggests that nondisabled children will not automatically include slow and/or different children in their activities (Jenkins, Speltz, & Odom, 1985). Early childhood educators must therefore devise curriculums that systematically involve preschoolers in cooperative activities and promote caring, nurturing attitudes.

Spontaneous Play: A Common Deficit

Many children with delays/disabilities do not learn to play spontaneously (Sherrill, 1986). Thus, this is a major goal of preschool adapted physical education. It involves learning the concept of fun and thus responding appropriately to social and/or sensory stimulation. Normal infants smile and laugh spontaneously in response to pleasurable sights and sounds between 1 and 4 months of age. They begin reaching for objects at about 3 to 5 months and, as soon as they develop coordination, will spend considerable energy working for a toy out of reach and exploring what body parts can do. Peek-a-boo, typically learned between 5 and 10 months of age, is the beginning of social game behaviors. Thereafter, normal infants seem to know instinctively how to imitate and respond to play activities initiated by significant others. Moreover, when left alone, they move about, explore the environment, and engage in solitary play. Gradually, without much help, they develop body control, object control, and basic movement patterns. Placed in an environment with play apparatus and equipment, normal preschoolers seem self-motivated to run, jump, climb, hang, slide, and balance. Movement is obviously fun, intrinsically rewarding, and inseparable from play.

In children with severe delays/disabilities this spontaneity is often diminished or absent. Compared with nondisabled peers, they engage in fewer activities and spend much of their time sitting and lying (Burstein, 1986). Assessment of such children should begin with structured observations of their spontaneous interactions with the environment. Do they initiate contact with people and objects and is their contact appropriate? How long do they sustain contact? Do they demonstrate preferences for some objects and people? If so, these preferences can guide the selection of reinforcement strategies in shaping behavior management plans.

No child is too severely disabled to benefit from physical education instruction. The goals, objectives, and pedagogy, however, differ from those used with nondisabled children. The major emphasis should be on the development of play and game behaviors that are movement oriented and result in good feelings about the self.

Motor skills should not be taught or practiced separate from function and/or play as sometimes occurs in therapy. This is because special education children, unlike normal peers, tend not to generalize motor skills. They do not know how to use motor skills unless direct instruction and practice in many different settings are provided.

Physical education for preschoolers with disabilities/delays thus often is conceptualized as developmental play instruction. Objectives focus on appropriateness and duration of interactions with toys, sport objects and implements, play apparatus, and people (Cowden & Torrey, 1990; Evans, 1980; Loovis, 1985; Wasson & Watkinson, 1981; Watkinson & Wall, 1982).

Motor Skill Problems

Most, but not all, preschoolers with delays/disabilities have motor skill problems. Typically, patterns like sitting, crawling, creeping, standing, and

walking emerge later than in normal children. Whereas these and other patterns occur in predictable sequence, without instruction, in normal infants and toddlers, they frequently must be carefully taught to special education children. Mastery of motor skills is compromised by retention of primitive reflexes and the presence of abnormal muscle tone which is manifested as spasticity or the opposite condition, floppy baby syndrome (hypotonia, atonia). Moreover, the appearance of righting, protective extension, and equilibrium reactions is often delayed or impaired; thus the child has particular difficulty with balance and body control.

Adapted physical educators in good teacher training programs are given instruction and practice with reflexes, reactions, and muscle tone similar to that received by occupational and physical therapists. It is important to lift, move, and position children in ways that do not elicit abnormal reflexes. When children are delayed in learning to walk, teachers must provide rich, full developmental play activities in lying and sitting positions. Scooter boards, slides, and surfaces for body rolls become important. Because ability to retrieve thrown and kicked objects is impaired, balls and balloons are often suspended from the ceiling or attached to the wheelchair.

Ball handling activities may require considerable instructional creativity when grasp and release mechanisms are affected by spasticity, muscle weakness, or generalized clumsiness. Emphasis is often placed on striking, kicking, trapping, and stopping skills rather than throwing and catching. These can be executed equally well from wheelchair or standing positions. Early intervention aims at discovering what children can do best and then building potentials into strengths.

The best way to assess motor skills of preschoolers is to observe them several times in an informal play setting with multipurpose apparatus that encourages exploration of locomotor and object control skills. Swimming and wading pools also make good assessment settings. Same age or slightly older peers without disabilities make excellent models, and much follow-the-leader type activity typically occurs. These observations can be used to set specific objectives for improvement of both qualitative and quantitative performance.

The Language-Arts-Movement Programming (LAMP) Model

To help preschoolers with disabilities/delays develop the play and game behaviors that will enable them to interact socially with others and learn through movement, a Language-Arts-Movement Programming (LAMP) Model is recommended. The acronym LAMP is intended to conjure up the vision of Aladdin's lamp and the magic of wishes that can come true. All children can learn when teachers believe in themselves and creatively use all of their resources. It is important, especially in the early years, that motor learning not be separated from language learning. The arts (creative drama and dance, music, story telling, puppets, painting, drawing, and constructing) can be a medium for unifying movement and language and vice versa (Eddy, 1982; Sherrill & McBride, 1984).

Language, in this model, is operationally defined as speaking, singing, chanting, or signing. It may come from teacher only, teacher and child in unison, or child only. Language can be used to express the intent to move and/or plan and rehearse a desired sequence; to describe the movement as it occurs; and to state a movement achievement once the action is completed. The combining of language and movement to teach concepts and develop schemas is powerful because the whole child is involved in active learning. The use of self-talk (also called verbal rehearsal) is well documented as a sound pedagogical device (Kowalski & Sherrill, 1990; Luria, 1961; Weiss & Klint, 1987). Learning words/labels for what they are doing enhances recall. Self-talk also facilitates time-on-task because it keeps attention focused on the movement goal.

A useful strategy is to create action songs or chants to familiar tunes like "Mulberry Bush," "Farmer in the Dell," and "Looby Loo" or nursery rhyme rhythms. The words must teach the name of the movement; associated body parts; or concepts about space, time, and effort (i.e., be relevant to the action). For example, beam walking might inspire a "Row, Row, Row Your Boat" chant like this:

> Walk, Walk, Walk Your Feet
> Gently Down the Beam
> Merrily, Merrily, Merrily, Merrily
> It Is Fun to Walk a Beam!

Or a simple repetitive chant like this:

> I Am Walking, I Am Walking
> You Walk Too, You Walk Too
> Walk, Walk, Walk; Walk, Walk, Walk
> And Stop, Freeze . . . Quiet, shh . . . .

Preschoolers with disabilities/delays need more repetition than normal peers. For repetition to provide the needed reinforcement, however, the child must be paying attention and receiving the kind of teacher input (eye contact, smiles, praise, pats) that makes him/her feel competent and good about self. Question and answer chants in unison with movement help achieve this goal:

> Teacher says, "Can you kick? Can you kick?"
> Child says, "I can kick. I can kick."
> Teacher says, "What did you kick, What did you kick?"
> Child says, "A ball. I kicked a ball."
> Teacher says, "Good, now go get the ball. Bring it here."

The same words are used over and over so children develop vocabulary and improve memory for sequences. Rhythmically synchronous background music can also help preschoolers remember movement sequences (Staum, 1988).

Language-Arts-Movement Programming (LAMP) begins with much structure in that the goal is to simultaneously teach motor skills, language, and play concepts so that the child, in turn, develops the capacity for solitary play. When

he or she begins interacting spontaneously with the environment (objects, playground apparatus, or people) in appropriate ways, this initiative is praised and reinforced. Emphasis then is on helping the child progress from solitary to parallel to interactive/cooperative play. Preschoolers need language (both receptive and expressive) to engage in cooperative play and benefit from small group movement and game instruction. The LAMP model promotes integrated motor-language-cognitive development.

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IX

Motoric and Fitness Assessment of Young Children

Crystal F. Branta, Ph.D.

Introduction

The acquisition of fundamental motor skills is vital to the overall development of preschool age children. As youngsters gain competence in skills such as running, jumping, skipping, throwing, catching, and kicking they receive physical, emotional/social, and cognitive benefits. Physical values include increased potential to move effectively and efficiently as well as improved muscular strength, flexibility, agility, and dynamic balance. Over time these values could increase the potential for children to maintain healthful activity patterns. Thus, health-related fitness (to include endurance and cardiovascular vitality) may be long-term physical benefits of developing mature motor patterns.

From the emotional/social standpoint, children are excited and intrinsically rewarded when they achieve new levels of skill. They acquire a positive dimension to their developing self-concepts. In addition, their peers hold them in esteem. This then provides extrinsic sources of feedback and reward to the youngsters who are advancing motorically.

Cognitively, children can learn many concepts through their movement. Table 1 displays four major categories of cognitive concepts that should be taught in motor development lessons during the early years. Since children seem to move constantly and individuals learn best by doing, it becomes easy to teach these cognitive concepts at developmentally appropriate levels in a suitable way.

Movement is important for children, and there are potential long-term benefits from acquiring motor skills. Thus, it is important for teachers in early childhood programs to evaluate their objectives in the motor domain and assess the progress of the students. This chapter is devoted to discussions on (a) assessment and evaluation, (b) techniques of assessing children, (c) summary and recommendations for teachers, and (d) references and resources.

Table 1
Cognitive Concepts Appropriate to Learn Via Movement in Early Childhood

Space and Direction	Form and Shape
up-down	alike-different
over-under	big-little
in-out	large-small
around-through-between	wide-narrow
on-off	high-low
above-below	straight-crooked
toward-away	curved-circular
left-right	round-square
front-back-behind	long-short
near-far	fat-thin
away from-close to	
forward-backward-sideward	
Time and Force	**Body Actions**
fast-slow	along-together
heavy-light	turning-twisting
soft-hard	stretching-curling
strong-weak	rocking-rolling
	freezing-relaxing
	tensing-collapsing
	alternating

Assessment and Evaluation

In order for a discussion of assessment and evaluation to be helpful for practitioners, working definitions of the terms be established so common understandings are reached. One needs, as well, to understand where measurement fits into the planning. The following definitions are proposed for this paper and are adapted from Baumgartner and Jackson (1975) and Ebel (1973).

Measurement determines the degree to which individuals exhibit specific characteristics and it involves collection of information (data). The measurement process involves (a) deciding upon the characteristics to be scored and (b) selecting the appropriate instrument(s).

Evaluation is a process that uses measurements to decide what changes are developing in children's movement patterns and fitness levels and to determine the amount and direction of the change. (At least two measurement cycles are needed to evaluate the change.)

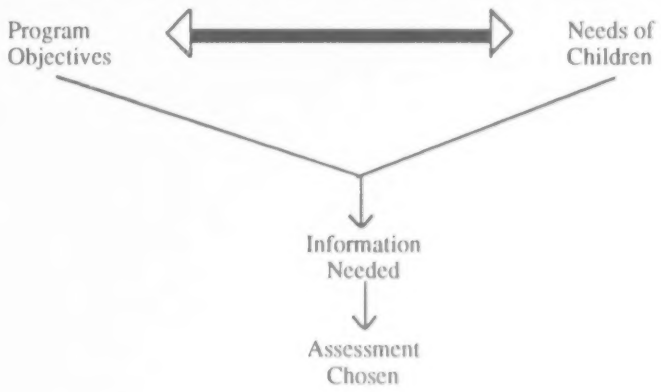
Assessment uses qualitative and quantitative data to determine a child's performance at one point in time. It is a less restrictive decision-making process than evaluation since change over time is not necessarily a factor.

The best information on preschool children and the most appropriate decisions about them are made from measurements taken at several assessment times. Therefore, the process advocated is one of evaluation, both formative and summative, where decisions are made during the course of a unit (program, year) as well as at the conclusion. Although this chapter involves details about assessment, concepts pertinent to evaluation over time are also presented so teachers, parents, and administrators can maintain sight of the goal—helping children mature in developmentally appropriate ways over time.

Value and Purposes of Assessment

In order for assessments to be valuable, teachers should make decisions about what information is needed. This information can be determined by analyzing the interaction between the objectives of the program and the needs of the children (see Figure 1). These data will provide the basis for selecting appropriate assessment instruments.

Figure 1
The Interaction of Objectives, Needs, and Assessments



For example, the two major objectives of a motoric program for preschool children should be:

- Development of mature patterns of large motor skills
- Cultivation of a positive attitude toward activity

A secondary objective can be the improvement of health-related fitness via sustained physical activity. Children of this age need to:

- Be active
- Learn by doing
- Discover how to move effectively and efficiently
- Feel success in moving

The interaction of these two areas indicates that teachers need data on how well their children are moving (qualitative assessment) and on how much movement is occurring (quantitative assessment). These data will help in selecting the assessment instrument(s), since some instruments might provide both kinds of information whereas others might give only one type of result. Teachers must make the best decisions about which tests are most appropriate for their students. The specific purpose of the assessment must influence this decision. Table 2 provides an alphabetized list of various reasons for assessment. Teachers should review this list, and supplement it with their own, to choose the most relevant purposes of assessment for their program and students.

Table 2
Summary List of Purposes of Assessment*

- Class development
- Classification
- Developmental screenint/early identification
- Diagnosis
- Early intervention
- Grading
- Guidance/need for referral
- Individual progress
- Lesson planning
- Program planning
- Research

*Summarized from Barrow, McGee, & Tritschler (1989); Langhorst (1989); Lichtenstein & Ireton (1984); and Southworth, Burr, & Cox (1980).

At the preschool level, the real values of assessment and evaluation can be grouped into two major areas. Those are (a) individual potential and (b) developmental screening.

Individual potential. Each child must be guided to reach full potential in the development of motor skills and health fitness. The intent should not be to develop the star athlete. Rather, it is to note individual progress (or lack thereof) and to plan activities that assist individuals toward acquiring good motor patterns. Children who develop mature fundamental patterns in running, jumping, hopping, skipping, kicking, throwing, catching, and striking (to list a few) will be able to participate successfully in a variety of games, sports, and dances. They may ultimately choose to specialize in one competitive sport or specific activity, but they will have the basis for being involved in many physical pursuits. Likewise, children who do not acquire these basic fundamental motor skills are severely restricted in opportunities for participation in most of the enjoyable childhood physical activities. When participation is decreased, the chances of excelling in even one area are remote. Also, since movement is important to children, those individuals who cannot participate easily often miss out on the socializing opportunities and rewards inherent in group games and sports. Moreover, these individuals can be ostracized and ridiculed by their

peers. Therefore, early childhood teachers must realize a major value of motoric assessment is to assist children in achieving individual potential. This includes both identifying where children are in their development and planning what they need to accomplish next.

Developmental Screening. Another reason for preschool motoric assessment is to evaluate early signs of delayed motor patterns in order to spot potential long-term problems or to determine if an individual is a later maturer who has normal patterns. This distinction is not easy or clearly defined in early childhood. Often, the child who has problems will exhibit characteristics (e.g. lack of dynamic balance, use of too much force, inappropriate planning) that are common and normal for the preschool level. However, developmental screening of a variety of skills will provide an overall assessment of a child's motor profile. If a child exhibits immature patterns on many skills and shows the characteristics mentioned previously, then she/he may be a candidate for early intervention strategies. The assessment provides data upon which to develop early intervention programs at a time when the chances for remediation are greatest. As Hobbs (1975, p. 89-90) indicates,

> Prevention is more effective and more economical, as a rule, than repair; it is better to identify problems early and correct them promptly than to let them grow until a crisis requires action. Indeed, for many developmental functions (such as hearing handicap) undue delay in treatment may lead to irreversible developmental damage.

For large motor skills, the preschool and early elementary years are the critical ones for intervention. Those are the times when skills are developing and the years in which the greatest modifications can be made. As Nash (1960) wrote, there is a primary age for learning motor skills. He called it the "all essential, crucial, skill learning decade." He indicated that the decade may be ages 4-14, or 6-16, but more likely was 2-12 years.

Preschool teachers are indeed challenged when reflecting upon the implications of assessment for each child and the myriad of purposes available for assessment. They may feel overwhelmed when planning for appropriate motor activities and assessment. It should be helpful to focus first on the children and their needs and to then think along the lines of the "Success-Failure Syndrome." Lichtenstein and Ireton (1984) discuss a similar concept they call "Self-sustaining Cycles." These ideas embrace a concept of "success breeds success; failure generates failure." If children are successful in movements, they experience joy and are intrinsically and extrinsically rewarded for their performance. Consequently, they are motivated to continue moving and practicing and they develop positive physical concepts and skills. At those times when they do fail in skills, they are not devastated and will continue to try and master the task. Conversely, if children fail often, they begin to withdraw from activity and they lack expectations of success. They become less motivated to participate and, therefore, experience more failure. The gap between their skills and those of the "successful" child only widens as children get caught in the failure loop. Therefore, it is vital that any motoric assessment/evaluation that is done be completed with the idea of ensuring that children are maintained in or advanced to the success loop (see Figure 2).

Figure 2
Success-Failure Syndrome: Interaction with Assessment

Quantitative and Qualitative Assessment

Two types of measurement scores generally used in the assessment of motor skills are quantitative (distance, time, accuracy) and qualitative (form, pattern). Quantitative measures have been the most widely obtained and reported scores overall. However for early childhood ages, qualitative measures are the more meaningful scores to obtain first. Qualitative assessment will provide teachers with an understanding of how children are moving. The pattern or form that the children use in the execution of a fundamental motor skill is determined without regard to the quantitative outcome of the skill. For example, when assessing an individual's ability to catch an object, one could determine (a) what pathway the arms and hands used in the catching attempt, (b) if the object is secured with the use of the chest, (c) if the object is caught with the hands only, or (d) if the individual can move in relation to the object's flight and catch with the hands. This qualitative assessment of catching ability views the form used by students while executing their attempts. A quantitative approach to assessing catching skill would be to count the number of "successful" catches without regard to the pattern the child used in attempting the task. It has been our experience in the Motor Development Laboratories at Michigan State University that a quantitative score of, for example, 7 of 10 successful catches can describe a child in an immature level of development (stage 1 on Table 3) as well as one who shows mature characteristics (stage 5). Therefore, in the developmental years of preschool and early elementary, quantitative scores by themselves do not adequately assess the motor performance of children. In fact, until any individual at any age reaches a mature pattern in executing the fundamental motor skills, quantitative assessment as a sole means of evaluating performance should be avoided. During the development of any skill, a qualitative measure should be used to determine a child's progress toward mature execution. A qualitative measure that is appropriate is to score a skill based on established developmental sequences.

Table 3
Summary of Fundamental Motor Skill Stage Characteristics from the Motor Performance Study, Michigan State University

Fundamental Motor Skill	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
THROW	Vertical windup "Chop" throw Feet stationary No spinal rotation	Horizontal windup "Sling throw" Block rotation Follow-through across body	High windup Ipsilateral step Little spinal rotation Follow-through across body	High windup Contralateral step Little spinal rotation Follow-through across body	Low windup Contralateral step Segmented body rotation Arm-leg follow-through
CATCH	Delayed arm reation Arms straight in front until ball contact, then scooping action, to chest Feet stationary	Arms encircle as ball approaches Ball is "hugged" to chest Feet stationary or may take one step	"To chest" catch Arms "scoop" under ball Single step may be used to approach ball	Catch with hands only Feet stationary or limited to one step	Catch with hands only while body moves through space
KICK	Little leg windup Stationary position Foot "pushes" ball Step backward after kick	Leg windup to the rear Stationary position Opposition of arms and legs	Moving approach Foot travels in a low arc Knee extending on contact Forward or sideward step on follow-through	Rapid approach Leap before kick Hop after kick Backward trunk lean during windup	

Fundamental Motor Skill	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
PUNT	No leg windup Ball toss erratic Body stationary Push ball/step back	Leg windup to the rear Ball toss still erratic Body stationary Forceful kick attempt	Preparatory step(s) Some arm/leg yoking Ball toss or drop Knee extending on contact	Rapid approach Controlled drop Leap before ball contact Hop after ball contact	
STRIKE	"Chop" strike Feet stationary	Horizontal push/swing Block rotation Feet stationary/stepping	Ipsilateral step Diagonal swing	Contralateral step Segmented body rotation Wrist follow-through	
LONG JUMP	Arms act as "brakes" at takeoff Large vertical component Legs not extended	Arms act as "wings" at takeoff Vertical component still great Legs near full extension	Arms move forward on takeoff Hands to head height Takeoff angle still above 45 degrees Legs often fully extended	Complete arm & leg extension at takeoff Takeoff near 45 degree angle Thighs parallel to surface when feet contact for landing	
RUN	Arms-high guard Flat-footed contact Short stride Wide stride-shoulder width	Arms-middle guard Transverse arm swing Flat-footed contact, sometimes heel-toe	Arms-low guard Arms opposition-elbows nearly extended Heel-toe contact	Heel-toe contact Arm-leg opposition High heel recovery Elbow flexion	

HOP	Nonsupport foot in front with thigh parallel to floor Body erect Hands shoulder height	Nonsupport knee flexed with knee in front and foot behind support leg Slight body lean forward Bilateral arm action	Nonsupport thigh vertical with foot behind support leg-knee flexed More body lean forward Bilateral arm action	Pendular action on nonsupport leg
GALLOP	Resembles rhythmically uneven run Trail leg crosses in front of lead leg during airborne phase, remains in front at contact	Slow-moderate tempo, choppy rhythm Trail leg stiff Hips often oriented sideways Vertical component exaggerated	Smooth, rhythmical pattern, moderate tempo Feet remain close to ground Hips oriented forward	
SKIP	Broken skip pattern or irregular rhythm Slow, deliberate movement Ineffective arm action	Rhythmical skip pattern Arms provide body lift Excessive vertical component	Arm action reduced Easy, rhythmical movement Support foot near surface on hop	

Developmental Sequences. Rating motor skills via the use of developmental sequences necessitates viewing those skills on a continuum from immature to mature (see Figure 3). At certain points on the continuum, a group of characteristics commonly displayed by children is identified by a "stage," (also called steps or levels). Children do not jump abruptly from one stage to the next, but there are periods of transition where the performance is changing, improving, and displaying some of the characteristics of a subsequent stage.

Figure 3
Model of a Developmental Sequence

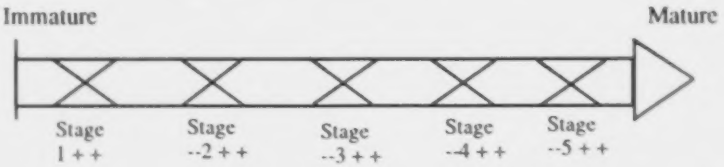


Table 3 provides a summary of the developmental sequence characteristics of 10 fundamental motor skills developed at Michigan State University. These stage characteristics were identified and refined by viewing films of thousands of children performing the skills over a period of 20 years. This summary grid provides teachers with a means for assessing the qualitative performance of children in their classes.

Table 4
Age in Months at Which 60% of Children Perform at Specific Developmental Levels of Selected Fundamental Motor Skills, by Gender.*

Stage	1		2		3		4		5	
Skill	M	F	M	F	M	F	M	F	M	F
Catching	24	22	39	39	50	50	70	59	80	76
Hopping	34	28	45	42	64	58	89	85	—	—
Jumping	23	23	45	44	74	73	11	20	—	—
Kicking	20	20	40	45	53	73	84	97	—	—
Running	22	19	26	24	40	40	48	60	—	—
Skipping	59	57	65	63	78	70	—	—	—	—
Striking	23	23	30	32	42	43	86	102	—	—
Throwing	15	15	38	42	45	56	53	72	60	99

*Adapted from: Seefeldt, V., & Haubenstricker, J. (1982).

In addition to developmental sequence description, data collected in three different laboratory programs (Motor Performance Study, Remedial Motor Clinic, Early Childhood Motor Development Program) at Michigan State University provides teachers with more information upon which to assess and understand the motor performance of young children. Table 4 depicts the age in months at which 60 percent of children exhibited specific stages of

development on eight fundamental motor skills. These data depict that by age 6 years (72 months), boys and girls were able to show mature patterns in only two skills (running and throwing for boys; running and skipping for girls). At that same age, girls showed near mature performance in catching and were one stage below mature in jumping, kicking, and throwing. Boys exhibited one stage less than mature in catching, jumping, and skipping. Four of these skills (hopping, jumping, kicking, and striking) reach maturity in 60 percent of children from age 7-10 years. These data indicate that, qualitatively, the fundamental motor skills are developing during the preschool years and, therefore, should be a primary means of assessment during these ages.

Composite and Component Assessment. Two methods of defining developmental sequences are the composite (total body) and the component (body segment) approaches. Table 3 provides a summary of characteristics that have been identified using composite analysis. This approach suggests that the developmental movement changes that occur in the various body segments are interrelated and exhibit enough commonality in occurrence to provide a cohesive way of assessing performance. Proponents of the component approach develop separate developmental sequences for appropriate body segments. They believe that segmented changes are independent of each other and should be assessed separately (Ulrich, 1987). Table 5 provides an example of a developmental sequence for the skip using the component approach. Individuals who use this method for assessment would view the leg and arm action separately. Each child would be given two number scores (e.g. 1-1, 1-2, 2-1) that correspond to the steps in leg action and arm action components. Descriptions for developmental sequences of other skills using component analysis can be found in *Developing Children—Their Changing Movement* (Roberton & Halverson, 1984).

Table 5
Developmental Sequences of the Skip:
Component Approach*

Leg Action Component

Step 1. One-footed skip. Other foot just steps.
Step 2. Two-footed skip. Flat-footed landing before weight is transferred.
Step 3. Two-footed skip. Landing is on ball of foot. Increased bodylean.

Arm Action Component

Step 1. Bilateral assist. Arms pump up together during weight shift from hopping to skipping foot and down during takeoff and flight.
Step 2. Semiopposition. Arms first swing up bilaterally with both hands in front of the body. A differential shift occurs backward with the arm of the stepping foot traveling back farther.
Step 3. Opposition. Arms move in opposition to the stepping leg. At no time are both hands in front of the body.

*Adapted from Roberton & Halverson (1984).

Regardless of which developmental sequence approach is used to assess fundamental motor skill patterns of children, the important factor is that a qualitative evaluation is done. The analysis of the form exhibited by the children can then be used to plan appropriate, relevant, developmental activities. In turn, these activities should assist children in achieving a higher level of performance in their fundamental motor skills. Appropriate quantitative scores (e.g. jumping distance, 30-yard run times, throwing velocity) may be used to supplement the qualitative stage measures. Taken together these data provide good information that teachers, administrators, and parents can use to (a) evaluate their educational objectives and (b) provide a sound, data-based educational plan that meets the needs of each child and helps that child achieve individual potential in acquiring fundamental motor skills.

Health-Related Fitness

A concern of educators, parents, and physicians is the degree of health fitness of youngsters in this nation. Many adults believe that attitudes toward healthful lifestyles should be inculcated in the young child. However, little research is being conducted to assist preschool teachers and parents in determining an appropriate fitness level for these children and reliable ways to assess the established levels. In the absence of specific guidelines recommended by professional organizations, many teachers have relied on other sources that guide discussions about why exercise is important and that provide ideas about types of exercise for children. A recent edition of *Weekly Reader* (1990, November), designed for the first-grade child, published a lead article entitled "Exercise." It said,

> Exercise is in the news.
> Exercise helps keep people healthy.
> Some people do not like to exercise.
> They say it is too much work.
> Do you exercise?
> Do you walk?
> Do you run?
> Do you ride a bike?
> Or do you swim?
> Try to exercise every day.

Articles of this nature provide an excellent beginning for children in understanding healthy activity patterns. Its weakness, though, is that it does not state the necessary duration of the suggested activity probably because none has been established by professional organizations.

It is extremely important to teach a concept of sustained activity (duration) during the preschool years. And, it is critical to assess the ability of young children to participate in a cardiovascular activity for a set time frame. To test the feasibility of administering such a test to preschool youngsters, a pilot study was conducted on twenty-two 4-year-old children enrolled in a child development program at Michigan State University. The specific objectives were to determine (a) if these children could complete a 9-minute walk-run test protocol and (b) if their distance scores would approximate those for 5- and 6-year-old

children published in the *Physical Best* fitness manual (McSwegin, Pemberton, Petray, & Going, 1989). A rectangular course was marked off in 1-yard intervals and was decorated with posters for visual stimulation and hanging balloons that the children could tap with their hands as they rounded a corner. Lively music designed for children was played during the run time to motivate students to continue. An adult "ran" with each group of three to four children, while another adult tallied the number of completed circuits for each child. Positive reinforcement and encouragement were provided for the duration of the run. Children were praised after their runs and all received stickers for participating.

The results of this study were encouraging. All but one child completed the 9-minute activity and that child legitimately had to go to the bathroom. The average distance score ranked around the 25th percentile rank of distances run by 5- to 6-year-olds. Moreover, the children were proud of their accomplishments and returned to their classrooms smiling and happy. This pilot study provides initial evidence that it is possible to assess fitness via sustained activity levels in 4-year old boys and girls. It is important, therefore, for teachers to establish objectives for duration of activity and subsequently to test for improvement in this area. For example, children could be pretested on the 9-minute run for distance. If the children completed that task, teachers could incorporate objectives and activities that would require the children to be active continuously for 10, 12, 15, and eventually 20 minutes. A post-test on the 9-minute run should result in an improved distance travelled during the run.

While sustained activity level is an appropriate area for assessment, other items typically incorporated in fitness tests should be avoided. Sit-ups, push-ups, pull-ups, arm hangs, and flexibility items are not the most relevant areas to spend time on in early childhood. Those tests can be administered soon enough in elementary school after motor skill development and sustained activity levels have been monitored during the preschool and early elementary years.

Techniques of Assessing Children

Assessing children in any domain (motor, cognitive, affective) requires an examiner who (a) is sensitive to children's actions (or inactions), (b) exhibits patience and flexibility, and (c) is thoroughly prepared to administer the instrument. These attributes and actions will help an examiner establish and maintain rapport with the children. This is critical to obtaining data that are reliable as well as usable and meaningful to the teacher and parents.

Assessment Environment

Establishing rapport with the children to be tested should be of paramount importance to an examiner as good rapport will facilitate the assessment. Children need to trust individuals who assess them and should be comfortable with the assessment environment. If a child is not ready to cooperate, then the testing should not proceed.

In our laboratories we begin the establishment of rapport prior to the child coming for the assessment. We explain to the parents what will happen and how

to assist their child in being prepared for the session. Chief among our suggestions is to avoid using the word *test*. We talk instead about "helping the people at MSU to find out what games children of different ages like to play." This concept is reinforced by the examiner at the beginning of the sessions as we tell the children, "We need to find out what games are best for each age. You can help us do that by trying each activity. Some games might be real easy. Some might be harder. That's okay because the hard ones probably should be put in the group for older children. You can tell us if the game we play should be for boys and girls who are 7 years old" (use an age about 2 years older than the child). This technique provides a way to minimize a child's frustration and sense of failure during the session as well since any negative outcome can be attributed either to the game being inappropriate for the child's age or to the examiner having made a mistake in putting that task with the set of games being played with the child.

Other practical suggestions that help to provide a good assessment environment for children are to:

- Have children wear clothes in which they are comfortable to move.
- Schedule plenty of time so that the child is not rushed and has adequate time for snacks or toileting needs.
- Decorate the room with child-oriented posters, balloons, or other items as a means to attract interest and promote interaction.
- Show the child the "list of games" to be played.
- Explain about any equipment (e.g. stopwatches) that may be unfamiliar to the child.
- Allow guided exploration with the equipment to ease the child into the actual assessment tasks.
- Test children in a familiar area (home, classroom) or unobtrusively as they play with other children in the program.

Individual test sessions are appropriate at the preschool level and allow examiners to concentrate on the feelings and actions of the individual child. However, assessing children in small groups of three to five with one "performing" at a time has been used with success in our laboratories. In fact, preschool children are not self-conscious in a small group situation and seem to be less intimidated than when confronted by an individual assessment. In small group sessions, videotaping becomes an effective tool to record performance. Moreover, children enjoy being filmed and like the idea of "making a movie."

A prepared examiner is the real key to providing a good assessment environment. Examiners who are thoroughly familiar with the test protocol and the needed data can direct an assessment session with ease. Sensitive examiners, who take cues from children but are not controlled by them. They use their own judgment regarding when to begin collecting data or when to stop or deviate from the protocol. "Flexibility and good judgment are needed in determining whether to plunge ahead, to introduce a break, or to terminate the session. At times, a balance must be struck between maintaining standardized administration procedures and responding to the child's needs" (Lichtenstein & Ireton, 1984, p. 76).

Common Concerns

Three other ares of concern when assessing motor skills and fitness of preschool children are developmental levels of the children, reliability of the results, and extent of parental involvement. Most adults know that preschool children have short attention spans, are apprehensive about new situations, and can become tired quickly. However, those same adults often fail to account for these normal developmental characteristics when planning motor and/or fitness assessments. Children should not be blamed or punished when they become distracted, shy, silly, or irritable. Rather, the examiner and parents need to remind themselves that these are normal traits for young children and should plan shorter sessions with breaks to meet the needs of the children. When the developmental levels of the preschoolers are taken into consideration, the data obtained will more likely be accurate and meaningful.

The reliability of the scores for the motor performance and fitness levels of the children is a concern. Teachers must have faith that the measures reflect an accurate representation of the abilities of the children. Maximum reliability can be attained when examiners know the test protocol and objectives and when observations are recorded at several different times. In addition, subjective comments, notes, or observations should be written to clarify or expand the records. Reliability is increased when children are motivated to provide maximum effort. Maximum effort is ensured when children enjoy a task, when they are positively reinforced or encouraged for their performance, and when they understand the task.

Videotape records are excellent tools to increase the reliability of results. Videotaping eliminates the need to record data on-the-spot. It allows teachers to concentrate on the children and their needs and allows the data to be gathered later at a less hectic time. Also, it is a permanent record that can be used to clarify performance and to show parents at conferences.

Collaboration with parents is crucial to the success of any educational endeavor. This partnership should begin with assessment. Parental reports on a child's perceived abilities or problems should be obtained. This could be done informally with an oral dialog or formally with an interview or written questionnaire. Some parental reports are more useful than others to teachers. But, each report can provide some information that can contribute to the motoric and fitness advancement of the child in question.

It is important, as well, for parents of preschoolers to observe the assessment session. This provides them an opportunity to see their child's performance and behavior and to observe how their child reacts to success and failure and interacts with the personnel. Parents, then, are able to ask questions of the examiner or teacher in postassessment sessions and feel part of the educational process. If parents are involved from the beginning, they feel empowered and tend to support the actions taken by teachers. They also will be more likely to reinforce activities at home or begin to provide physical activity opportunities for their youngsters.

Summary and Recommendations

The ability to move with ease and efficiency contributes to the overall development of preschool and elementary age children. Improving motor skills and establishing healthy activity patterns can have immediate and long-term benefits to the physical, affective, and cognitive development of individuals. Because of the importance that acquiring motor skills has for children, it is vital that educators attend to objectives in the motor domain and evaluate the progress of their students on an ongoing basis.

Teachers need to make informed decisions about what to assess based on a review of program objectives and needs of children. This review should be completed with the purpose of helping individuals reach their potential and evaluating for early signs of delayed motor patterns. Motor assessment is valuable when the results (a) help teachers evaluate which children may be caught in a "failure loop" and (b) provide data upon which to devise activities to move the boys and girls to the "success loop."

Qualitative assessment through the use of developmental sequences provides teachers with an understanding of how children are moving. The performance of the children can be rated on a continuum from immature to mature. Data indicate that the fundamental motor skills are developing during the preschool years and, therefore, qualitative assessment should be the primary means of evaluation. Quantitative scores do not adequately assess the motor performance of children and should be used as supplementary information to that on motor performance pattern development.

The health-related fitness of preschool children needs attention. Recent research indicates that it is feasible to administer a 9-minute run/walk test protocol with 4-year-old children. It is important for teachers to set objectives pertaining to sustained activity levels and to test for improvement by the children.

In order to be successful and obtain reliable data when assessing children, examiners must take time to establish rapport and trust with parents and children. The examiners must be sensitive, flexible, patient, and thoroughly prepared. Children need to be comfortable in the assessment environment. This can be accomplished by taking developmental levels into account and by empowering parents to assist in the process.

Helping children mature motorically and physically in developmentally appropriate ways should be the goal of early childhood programs. Teachers, parents, and administrators should maintain sight of this goal as program objectives are established, the performance of children is assessed, and evaluations are made on motor prowess and fitness levels.

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Resources

This section provides a list of resources that would be helpful for teachers. It includes one monograph and three assessment instruments.

Bruininks, R. H. (1978). *Bruininks-Oseretsky test of motor proficiency.* Circle Pines, MN: American Guidance Service.

This test assesses the gross and fine motor ability of children ages 4 1/2 to 14 1/2 years. It is comprised of 46 separate items divided into eight subtests (running speed and agility, balance, bilateral coordination, strength, upper-limb coordination, response speed, visual-motor control, and upper-limb speed and dexterity). Designed to be administered individually, this test takes about 1 1/2 hours for the complete battery and about 30-45 minutes for the short form. Strong points include good technical information, national norms by gender and 6-month age intervals, and an excellent examiner's manual. This test is quantitative in nature and needs to be supplemented with qualitative information.

Langhorst, B. H. (1989). *Assessment in early childhood education: A consumer's guide.* Portland, OR: Northwest Regional Educational Laboratory. ED 307 980.

This monograph is written for use by early childhood educators or administrators to guide their selection and use of early childhood assessment instruments. Its primary focus is on standardized, published tests, and a review of more than 50 instruments is provided. Included are excellent discussions on issues in early childhood assessment and criteria for selection of instruments.

McSwegin, P., Pemberton, C., Petray, C., & Going, S. (1989). *Physical best. The AAHPERD guide to physical fitness education and assessment.* Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.

The focus of *Physical Best is* health-related fitness. Its main objective is to motivate all children and youth to engage in physical activity which promotes health and well-being. This easy-to-interpret manual provides chapters on education (program planning, goal setting) as well as assessment (tests and interpretation, implementation, health fitness standards). The health fitness standards used by Physical Best allow students to compare their scores to a measure identified as the health fitness standard required for individuals to be healthy. Therefore, students are encouraged to improve their own fitness level and not to compare to norms such as percentile rank. This manual and test kit are a "must have" for those educators interested in the health-related fitness of their students.

Ulrich, D. A. (1985). *Test of gross motor development.* Austin, TX: Pro-Ed.

The TGMD is designed for children ages 3-10 years and evaluates the qualitative aspects of locomotor and object control skills. The 12 test items represent content frequently taught to children in preschool and early

elementary grades and can be scored by a wide variety of professionals with minimum training. Individually administered, the TGMD takes about 20 minutes per child. Strengths of this instrument include having good technical information and examiner's manual, providing criterion-based information that can be used for instruction, and providing documentation of student progress and program effectiveness. In addition, Ulrich has standardized this instrument, making it one of a few that publishes norms for a qualitatively designed instrument. This manual and test kit would be an excellent addition to the early childhood educator's resource library.

X

Health Assessment and Intervention Techniques for 3-, 4-, and 5-Year-Old Children

Victoria Hertel, RN, MS

Introduction

With the passage of Public Law 99-457 in October 1986, local school districts have become more involved in identifying and providing or coordinating services for young children with special needs and for some without special needs.

The health professional in the local school district is usually the school registered nurse or the public health school nurse. Other registered nurses involved with young children in an educational setting are those in Head Start and community center board school programs. All of these registered nurses have a responsibility to coordinate health information and assist the school to prevent duplication of health services. Through their screening and assessment of young children, there is the opportunity to not only identify those children known to have special health needs, but also to identify those who have a special health need that has not been previously noted.

During the identification phase of the screening program, five functioning areas (educational, physical, social, psychological, and communicative) are screened. Further assessment is done if a potential problem is identified. These young children have a variety or combination of medical care providers. Some may have no "medical home," if the family is low income or moves frequently. A local assessment of medical care providers used by these children might identify private physicians, the public health well-child clinic, and public and private institutions such as a children's hospital or a university medical center.

It is recognized that other professionals in the school setting will probably be assessing functioning levels in the educational, communicative, social, and psychological areas, particularly when there is no school nurse on site. The nursing assessment of those areas is designed to support and identify the functions that would be picked up in the routine physical assessment. Referral should be made to the appropriate school professional for further assessment in those four areas if a need is identified. Care should be taken to stress that all children need a medical home where ongoing preventive health service can be provided on a routine basis. The screening and assessment of the child in the school setting is not to replace the care and guidance in the medical home.

The anticipatory guidance section of this paper is written for registered nurses, as well as for the other professionals working with the child. Again, it identifies screening and assessment components and intervention recommendations. It is expected that all school personnel working with these preschoolers will be providing guidance.

For the purpose of this chapter, nursing screening, assessment, and intervention techniques have been limited and serve only as a guide to stimulate interest and further development by the professional nurse. Several additional resources to use in this endeavor are listed at the end of the chapter.

Nursing practice is regulated by the Nurse Practice Acts of each state and by Standards of Nursing Practice. These standards have a strong emphasis on the nursing process of data collection, nursing diagnosis, planning, intervention, and evaluation. The following guide is to be used within this nursing process. A good basic knowledge of the characteristics of 3-, 4-, and 5-year-olds is essential before undertaking a nursing assessment and providing intervention counseling with parents.

This chapter was adapted from the *Guidelines for Health Assessment and Intervention Techniques for 3, 4, and 5 Year Old Children* (Colorado Department, 1988).

Physical Assessment and Intervention

Nursing Assessment of Physical Development

A. Subjective

History information is to be gathered from the parents and child prior to and during the physical examination. Since the child may receive booster immunizations, the nurse must carefully assess what the child has received in the past, noting any unusual reactions.

B. Objective

1. A complete, unclothed physical examination is to be performed by the nurse.
2. If there is a concern with wetting, the nurse should look for any obvious physical findings that might explain the child's inability to be toilet trained (i.e., urethral malformation or chronic urinary tract infections). A referral may be indicated.
3. To assess the physical development of the child, the nurse will directly observe and interact with the child, while doing the physical examination. Young children enjoy being included and like games and action activities that can easily be incorporated into an office setting. The nurse can gain valuable information by including the child in the assessment process.
4. Vision and hearing acuity must be assessed by screening. Observe for amblyopia (reduced vision).
5. Appropriate developmental screening tools will provide information in assessing the child's developmental status.
6. Height and weight measurements are to be taken and graphed on growth charts and compared with previous findings.

7. Blood pressure must be measured and recorded.
8. Since the effectiveness of these screening measurements depends upon accuracy, the nurse must work around the preschooler's short attention span, curiosity, and increased activity level in order to obtain valid data.
9. Other health care providers may also do the assessment of physical development. Compare your findings with theirs.

Intervention/Guidelines for Physical Development

A. Growth and Motor Development
   1. Parents should be told if the preschool child's growth rate is usually slow.
   2. Parents of the 3-year-old should make available age-appropriate toys: scissors, large beads, crayons, and other materials which will enhance the child's fine motor development. Swings, tricycles, and activities that include running and jumping will help develop gross motor function.
   3. Activities that enhance fine and gross motor skills of the 4-year-old should be encouraged, such as experimenting with crayons, scissors, puzzles, running, hopping, climbing, jumping rope, skipping, throwing and catching balls. Participating in well-supervised gymnastics classes can be fun as well as beneficial for the child's developmental growth.
   4. The 5-year-old wants to be independent. Parents need to encourage this by giving the child the opportunity to be independent while maintaining appropriate limits. Parents need to provide the child with reassurance and guidance in adjusting to school/group needs.
   5. The 5-year-old child will learn to be more skillful with his or her hands if given assistance and an opportunity to learn. Parents need to make available materials that will enhance fine and gross motor development, such as crayons, markers, small beads for stringing, jungle gyms, tricycles, or other items. Handedness is established by 4 years of age—do not try to change.

B. Activities of Daily Living
   1. The child should be encouraged to be independent around activities of daily living such as brushing teeth, bathing, dressing, and toileting.
   2. Dental care should be obtained on a yearly basis for caries prevention and treatment.
   3. The 3 year old should be encouraged to take a daily nap; 4-year-olds need approximately 12 hours of sleep per day.
   4. Parents should be reminded that occasional toileting accidents are normal for 3- and 4-year-olds as they get busy and don't want to take the time to go to the bathroom. The 3-year-old child may not be dry at night.
   5. Discuss with parents the possibility of normal regression of toilet training with regard to stress. If regression is a problem or a potential problem, encourage the parents to be patient, understanding, and supportive, and the child will eventually resume the previously learned task.

6. Parents need to provide a nutritious, balanced diet.

C. Health Behaviors
   1. Parents should understand the powerful influence that their own health behaviors will have on the child. Nurses and others should begin teaching the child some appropriate health behaviors such as hand washing, sneezing/coughing precautions, use of seatbelts.
   2. The nurse should check to see that immunizations are current. DPT (diphtheria, pertussis, tetanus) and OPV (polio) boosters are usually given at 5 years of age.
   3. Health care needs should be professionally supervised every 12 months.

D. After the nurse completes the assessment of physical growth and development, using the physical examination and appropriate screening tools and tests, he or she is to analyze the data and summarize physical functioning by identifying both the strengths and weaknesses of the individual child. This information should be shared with the parents/guardians and other appropriate individuals, such as health care providers.

E. Refer any child that is having particular physical and/or significant developmental delays, to the appropriate specialist.

Intellectual and Verbal Screening and Intervention

Nursing Screening of Intellectual and Verbal Development of 3-, 4-, and 5-Year-Olds

A. Obtain information by interviewing and observing the child and parent.
   1. How long can your child stay involved with a game or project?
   2. Does he know his full name, sex, and possibly his address?
   3. Does she talk in well-formed sentences, using proper word choice?
   4. Does he know the difference between good and bad behaviors?
   5. Does she enjoy playing simple games with others? Does she understand what it means to take turns?
   6. Is he able to follow simple instructions and understand simple explanations?
   7. Is she interested in new activities? Does she comprehend new ideas quickly?

B. Screening tools to help identify the child's intellectual and verbal development may be used.

C. Other educational professionals will do the assessment of intellectual and verbal development. The nurse should compare his or her findings with theirs.

Intervention/Guidelines for Intellectual and Verbal Development

A. The child should be encouraged to apply concepts and language to familiar and enjoyable situations, as this helps the learning process.

B. It is important for parents to be aware of their child's particular level of development and provide opportunities for intellectual growth.

C. Speech and language development can be enhanced by teaching the child to listen to stories and songs and to other children.

D. Encourage the child to express thoughts, frustrations, and feelings.
E. Parents should observe the child in pretend play, noting if the child is able to differentiate between reality and fantasy.
F. If occasional dysfluency is noted, parents should be encouraged to be patient with the child and let him or her say these words and sentences without help.
G. Encourage interaction with other children of the same age or slightly older (e. g., through church school, preschool, library group).
H. Encourage activities that require the child to figure things out, which encourages problem solving and independence.
I. Any child who exhibits problems, questionable findings, and/or delays in verbal expression or understanding should be referred to a speech/language specialist.
J. Any child who exhibits questionable findings, problems, and/or delays in learning and comprehension should be referred to an educational specialist.

Emotional and Social Screening and Intervention

Nursing Screening of Emotional and Social Development for 3-, 4-, and 5-Year-Olds

A. Obtain information by interviewing and observing the child and parent.
   1. How would you describe your child? Friendly? Irritable? Cooperative? Aggressive?
   2. Have you observed aggressive behavior from your child? If so, why was she being aggressive and how did she express her feelings? Verbally? Physically?
   3. Have you observed mood swings, where one minute the child is happy and the next moment he is tearful?
   4. Does she enjoy playing with other children her own age? Does he play well with other children? Share toys?
   5. If there are siblings in the home, how does she get along with them? What are their ages?
   6. How often do you leave your child with other people? How does he respond to being left?
   7. If the child is not in kindergarten, is she in a preschool program or a play group? If so, how does she respond when you leave? What kind of reports do you get from teachers or other adults caring for her? Does she look forward to these forms of socialization?
   8. When your child entered kindergarten, did you notice any type of aggressive behavior? Withdrawn behavior? If so, has it resolved (for 5-year-olds only)?
   9. Have you observed him in pretend play? If so, have you noticed his increasing interest in gender-related roles during the play?
   10. Is your child beginning to be aware of sex roles? What types of questions or comments is she making? How do you respond?
   11. Have you observed your child in activities in which he is trying to please the parent of the opposite sex, at times being almost competitive with the parent of the same sex?

12. When disciplining your child, have you noticed that she responds better to suggestions and rewards for positive behavior, rather than commands?
13. Does your child enjoy ritualistic practices such as reading a book or being read to at bedtime? Always or occasionally?
14. Does he exhibit any behaviors such as constantly picking his nose or biting his fingernails?
15. Is the child able to perform all toileting activities by herself? Is your child completely bowel and bladder trained for day and night? How do you handle bed-wetting episodes? Children experiencing bowel and/or bladder problems should have a thorough history, physical exam, and urinalysis. (Referral may be indicated.)

B. The nurse needs to observe the child and parent during the health visit in order to accurately assess the child's emotional and social involvement.
C. Other educational professionals will assess the emotional and social development of the child. The nurse should compare findings with theirs.

Intervention/Guidelines for Emotional and Social Development

A. The child needs to feel secure, loved, wanted, and accepted at home and at school.
B. It is important that the 3-year-old be allowed to experience a variety of social encounters with appropriate guidance and reinforcement so that personal/social behaviors develop normally.
C. Preschool and day-care settings are important and helpful in preparing the child for kindergarten. One of the most important aspects of preschool is teaching the child to become social. The child needs to learn how to be part of a group and how to play with peers and share objects such as toys and books.
D. Kindergarten is important; what is learned at school should be reinforced and encouraged at home, which means parental involvement and communication with school.
E. Reassurance and guidance from adults is still needed for the 5-year-old in adjusting to school and group activities.
F. Children of this age need limit setting, time out, and time alone with parents.
G. The 3-year-old generally responds better to suggestions and positive reinforcement than to commands.
H. The child should be encouraged to express inner feelings, anxieties, and fears.
I. Parents need to be encouraging, involved, and supportive in the child's activities and accomplishments. Give praise for a job well done.
J. Ritualistic practices are important to the child, especially around bedtime.
K. The 4- and 5-year-old child needs to be given age-appropriate tasks to do, such as setting and cleaning up the table, or any activity that enhances independence.
L. Since all small children go through the Oedipal phase, parents should not be concerned, unless a child becomes excessively fearful or antagonistic. A degree of guilt is often seen in these children because they secretly wish the same sex parent would vanish.

M. After the nurse completes the assessment of emotional and social development, using observation and appropriate screening tools, he or she will analyze the data and summarize the social/emotional functioning by identifying both the strengths and weaknesses of the child. This information should be shared with the parents and other appropriate persons.
N. Refer any child that is having any emotional/social problems and/or significant developmental delays, to the appropriate specialist.
O. If bed-wetting is a concern at 5 years of age and has no organic basis, parents should be counseled as to management through behavior modification techniques.

Anticipatory Guidance of Childhood Activities for Parents of 3-, 4-, and 5-Year-Olds.

Safety and Accident Prevention—obtain information by interviewing and observing the child and parent

A. Assessment of safety and accident prevention.
   1. Does your child wear a seat belt or use an appropriate car seat whenever riding in a car or truck?
   2. Even though your child is getting older, is your house still poison proofed? Are matches, cleaning supplies, medications, firearms, and any other obvious hazards out of reach?
   3. Do you have ipecac in the home? Is the poison control center's telephone number easily available by the telephone?
   4. With what types of toys and games does your child play? Are they safe?
   5. Is an adult present when your child is playing outside?
   6. Does your child venture into the street often? Is so, how do you handle this situation?
   7. When swimming, is there always an adult who can swim actually observing the child at all times?
   8. If your child sees a strange dog, how does she respond? Does she come in and tell you or does she walk up to the dog and pet it?
   9. Does your child know what to do in case of a fire in the house?
   10. Does your child know his name, address, and telephone number?

B. Intervention/Guidelines for Parent Counseling Safety and Accident Prevention
   1. For 3-Year-Olds
      a. Regular automobile seat belts may be used between 3 and 4 years of age or at a weight of 40 pounds.
      b. Continue to keep knives, matches, medications, poisons, cleaning products, firearms, and other harmful items out of reach. Firearms should be unloaded and ammunition locked up.
      c. It is still necessary to have ipecac available in the home. Know the poison control center's telephone number.
      d. Teach the child the danger of running into the street; balls and tricycles start out on sidewalks and driveways but tend to end up in the street. The child must constantly be reminded of street safety and

must be closely supervised. Do not depend on the preschooler remembering such instructions.

e. Advise the child to avoid strange dogs and never bother dogs that are eating or sleeping.

f. Knowing how to swim at this age does not make these children water safe. They must be supervised constantly by an adult who can swim.

2. For 4- and 5-Year-Olds

a. The 4-year-old child continues to require close supervision.

b. Electrical tools, firearms, matches, medications, and poisons should be locked up and out of reach. Ipecac should be on hand for emergencies and the poison control center's telephone number accessible.

c. The child should not have unsupervised access to, or ride a tricycle or bike in, the street.

d. Proper car seat restraints should always be used.

e. While in or near water, the child should always be watched without interruption by a responsible adult who can swim. The child should be taught to swim.

f. Teach the child what to do in case of fire in the home.

g. Children at this age should be taught their full name, address, and telephone number in case they get lost.

h. The child should be taught not to talk to, go with, or accept food from strangers and to report contacts with strangers to parents.

Discipline

A. Assessment of Discipline Methods

1. Obtain information by interviewing and observing the child and the parent.

a. Describe your child's behavior at mealtimes, bedtime, when getting dressed, and during toileting. How do you respond if she does not cooperate?

b. What aggressive behaviors does your child exhibit? What do you do about these behaviors? How do you handle these situations?

c. Which of your child's behaviors bothers you? Which behaviors do you want to change?

d. For what behaviors does your child most often get rewarded? What kind of rewards does he get?

e. For what behaviors does your child most often get punished? In what ways do you punish her? Do you think this punishment works?

2. The nurse should observe the child's behavior in the office, noting how the parent interacts with and disciplines the child.

B. Intervention/Guidelines for Parent Counseling on Discipline Methods

1. Discipline plays an important role for the child in development and in preparing her or him for easier adaptation to school. It is important for the child to learn socially acceptable behavioral responses.

2. Encourage parents to agree on and be consistent with disciplinary procedures; children will be confused by conflicting messages.

3. Provide appropriate and clearly stated limits, along with an explanation of the consequences if the rules are broken. Continuing, meaningless

threats are ineffective. Follow through with the previously stated consequences when rules are broken.

4. Establish a balance between the child's need for independence and the need for limits.
5. Always bear in mind the positive effects of praise. Look for the good in the child's behaviors and praise him or her. Do not direct anger at the child but at the incident or undesirable behavior.
6. Age-appropriate discipline techniques may be very helpful for setting limits and controlling undesirable acts. Reprimands should be given privately.
7. Allow parents time to verbalize regarding the frustrations of discipline; support parents' attempts to discipline the child through verbal admonishment and/or time out periods.
8. Be aware that problem behaviors at this age may result from other problems in the child or family rather than reflecting normal oppositional behaviors.
9. The longer the parents wait before teaching the child what behaviors are appropriate, the more difficult it will be to change inappropriate behaviors.

Play

A. Assessment of Play

1. Obtain information by interviewing and observing the child and the parent.
   a. Does your child play with and enjoy other children? If so, how old are these playmates? Does he share well with his friends?
   b. What types of games, books, and toys do you have in the home? Are they age appropriate and safe?
   c. Have you observed your child in pretend and imaginary play?
   d. Does your child attend a preschool or kindergarten? If so, what activities does she enjoy? Do you feel she has adjusted to the particular setting? What feedback do you get from her teacher?
   e. How much TV and/or VCR movies does your child watch a day? A week? Do you supervise what he is watching?
2. Observe the child in a group setting. Does she appear to be similar developmentally to the other children?
   a. Do people understand him when he speaks?
   b. Is she able to print her own name; color, paint, draw?
   c. How does he get along with other children his own age?
   d. Most of the time, how would you describe your child? Happy? Unhappy?

B. Intervention/Guidelines for Parent Counseling

1. Parents should realize how the child's play affects personal/social, fine and gross motor, and language development, as well as the overall happiness of the child.
2. There needs to be a balance between quiet and boisterous play, indoor and outdoor play, and playing alone and interactively with others.

3. Watching TV is not an appropriate type of play unless the parents have supervised the selection of programs and have limited the amount of time spent in front of the television.
4. Depending on the child's birthdate, it is very beneficial that the child be enrolled in a preschool or kindergarten program. Children need to be away from parents for short periods of time and need to learn socialization skills with peers.
5. The child needs to be allowed to explore, to show initiative, and to communicate.
6. The 4- and 5-year-old needs to be allowed to take exploratory walks, go on outings to new places, and on shopping trips.
7. Parents should have begun to offer the 3-year-old choices in appropriate situations, such as which book to read.
8. The 4-year-old is ready for some card and board games such as Go Fish© and Candy Land.©
9. Try to have a special time alone with the child, especially if there are siblings.
10. Provide the child with opportunities to talk about her day.
11. Talk with parents about safe toys, age-appropriate activities, and the importance of play in the developing child.

Sleep

A. Assessment of Sleep
   1. Obtain information by interviewing the child and parent.
      a. Determine the child's sleep patterns. How many hours of sleep does the child get in a 24-hour period?
      b. Does the child still nap? If so, how often and for how long?
      c. Does he awaken during the night with nightmares? How often? Does he come into your room? How do you handle the situation?
      d. Does your child ever want to sleep with you? If so, what are her reasons? How do you respond?
      e. Does your child have a regular bedtime and bedtime ritual?

B. Intervention/Guidelines for Parent Counseling on Sleep
   1. The child should be out of a crib and into a youth or regular bed.
   2. It is preferable that the child sleep alone and in her own room. However, this may not be possible, and she may have to share a room. If so, she should always be in her own bed.
   3. Without a nap, some children are tired during the evening and may even have trouble getting through dinner. A transitional step such as a quiet time period in the afternoon is often helpful.
   4. It is normal for children to have occasional bad dreams. They should be reassured and comforted and put back in their own bed.
   5. For children who have frequent bad dreams or express fear of the dark, a night-light is often helpful.
   6. It is not recommended for the child to sleep with the parents. The advantages and disadvantages need to be discussed.
   7. Stress the importance of continuing a regular bedtime and bedtime ritual. Return visits for hugs and drinks should be discouraged.

8. The child should be physically tired before being put to bed; avoidance of excitement for 1/2 hour prior to bedtime is often helpful.
9. Parents should expect the child to go to bed and stay there.

Sexuality

A. Assessment of Sexuality

1. Obtain information by interviewing the child and parents.
   a. What questions has your child asked about sex or sexual identity?
   b. How do you answer your child's questions?
   c. Has your child engaged in any sexual exploration? Describe.
   d. Have you observed your child masturbating? How do you deal with this?
   e. What information have you given your child about his gender or bodily functions related to sex?
2. It is important for the nurse to determine the parents' understanding and philosophy of sexuality and sexual identity, as their attitudes about sex will influence the content and depth of information that is given to the child.
3. What are the parents teaching the child about sexuality? For example, parents should always use correct terms for genitals.

B. Intervention/Guidelines for Parent Counseling on Sexuality

1. Parents should answer the child's questions about sex in as natural a way as possible, at the child's level of understanding, and without distorting the truth. Stay within the boundaries of the question.
2. Parents' reactions to the child's sexual questions and/or situations must not be guilt provoking for the child.
3. Ensure privacy for children when they are dressing or bathing.
4. Emphasize that sexual curiosity and exploration are normal and important to the development of the child.
5. It is appropriate for parents to advise children that in most situations it is not proper for others to touch or look at their genitals, but is a normal part of the physical examination.

Nutrition

A. Assessment of Nutrition

1. Obtain information by interviewing the child and parent.
   a. What does your child normally eat in a 24-hour period, including snacks?
   b. What are the parents' values and practices regarding food? Is breakfast important? Do they eat fast foods? Are parents knowledgeable about the basic four food groups as far as meal preparation?
   c. Are there cultural influences that would affect the child's diet?
   d. What kinds of snacks is the child given when she is hungry between meals?
2. Do the growth measurements and general development reflect a well-balanced diet?
3. Growth charts should be used to assess individual growth.

B. Intervention/Guidelines for Parent Counseling on Nutrition

1. Establish a pleasant atmosphere at mealtimes with table conversation that includes references to the child, the food, the day's activities.
2. Keep accessible, healthy snacks on hand. Reduce the amount of non-nutritious (junk) food in the house.
3. Parents can take advantage of the fact that the child is more open to new foods and introduce new nutritious, well-balanced foods into the diet.
4. If the preschooler has favorite foods, these items should still be allowed as part of the meal plan.
5. Food items should be colorful and attractive in order to appeal to the child.
6. Give the child small portions of food at mealtimes. Second helpings can always be available.
7. Allow the child to make some food choices; be aware of likes and dislikes.
8. Allow the child to assist in meal planning and preparation and use the time as an educational experience.
9. Never use food as a reward or a punishment.
10. Time spend dawdling over food should be limited and the child should be excused and given only one small, nutritious snack before the next meal.

Dental

A. Assessment of Dental Care

1. Obtain information by interviewing and observing the child and parents.
   a. Does the child brush his teeth? If so, how often? With fluoride toothpaste?
   b. Is brushing an established habit or is it an occasional occurrence?
   c. If your child does not like to brush her teeth and it is a daily battle, what are her reasons?
   d. Has the child been to the dentist? If so, what was his experience?
   e. With a dry toothbrush have the child demonstrate how she brushes her teeth.

B. Intervention/Guidelines for Parent Counseling on Dental Care

1. Encourage parents to buy pleasant tasting toothpaste that contains fluoride.
2. Since preschool children are eager to please, this is a perfect time to establish dental care habits; teeth should be brushed twice daily, and the child should be taught to rinse her mouth with water after snacks.
3. Avoid high sugar foods and drinks, especially at bedtime.
4. If the child has not been to the dentist, have parents schedule the first dental appointment. The first trip to the dentist should be nonthreatening and fun.

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The Preschool Environment

XI

Health Promotion Through Parent Involvement in Early Childhood Education

Marjorie J. Kostelnik, Ph.D.

Mrs. Gonzales mentions to the teacher that Jorge seems constantly to bump into or fall over things. He's really going to hurt himself someday if he keeps this up," she laments. "What can I do so he won't be so clumsy?"

Kathy Hale inquires whether the daycare home provider knows of any good dance classes in the community. She's eager for her 36-month-old daughter to begin formal lessons.

Patrick's father suggests dropping the children's outdoor play period so teachers can have more time for classroom instruction.

Mrs. Salari wonders whether or not her 5-year-old son should be on a diet. Her best friend says "yes," her mother-in-law says "no," and now she is asking the center director's opinion.

Although each of these parents has different concerns, they also have certain characteristics in common.

- All are parents of preschoolers between the ages of 3 and 5 years.
- Every one of them has an emotional investment in his or her own child.
- All of them have perceptions and opinions about their children's health and physical development.
- Each parent can become more actively involved in the health, physical education, recreation, and dance (HPRD) facet of their child's early childhood program.

The Changing Nature of Parent Involvement

The notion of involving parents in their children's early education is not new. For years, connecting home and school has been a fundamental aim of Head Start and other early intervention efforts with young children (Johnston, 1982). In fact, when we talk about creating or maintaining appropriate preschool programs, parent involvement is invariably cited as an essential quality indicator (Bredekamp, 1987; Day, 1988).

However, the nature of parent involvement as referred to here contradicts long established stereotypes. The traditional role of parents as simply providing

refreshments for school parties or attending the once a year "Parents Night at the Center" has been expanded. The role of the school now includes more than merely sponsoring a fall open house or periodically rounding up experts to speak to parents about the importance of physical fitness or good health practices for young children. That old vision relegated parent involvement to a few obligatory events dominated by one-way communication from school to home. It assumed that schools knew best while parents knew little. Teachers maintained the leader position with parents as followers.

The present interpretation of parent involvement is much more comprehensive, interactive, and collaborative. Within this newer framework, involving parents is a continuous process that includes parents in various phases of planning, implementing, and assessing the total program (Johnston, 1982). Through this process, parents and teachers form an alliance in which they develop a common understanding of what children are like—how they develop, how they behave, the challenges they face, and how we can help them meet these challenges. Parents and teachers also come to a shared conception of what good education is—what it looks like, how it operates, what it strives to achieve, what it requires, and what it precludes (Hymes, 1974). When such alliances occur, parents and teachers actually learn together. They provide mutual support to one another in their efforts to make life more meaningful for children and themselves (Swick & Duff, 1978).

This coalition between parents and teachers can take place in several different ways and with varying degrees of participation by both groups. Joyce Epstein, a leading researcher on the subject, has identified five categories of parent involvement (identified in Table 1). These range from lessor to greater ties between home and school.

Table 1
Five Major Types of Parent Involvement

Type 1: Parenting
Parents become involved in the basic obligations of ensuring children's health and safety; acquiring the parenting and child-rearing skills needed to prepare children for school; supervising, disciplining, and guiding children at each age level; and creating positive home conditions that support learning.

Type 2: Communicating
Parents receive and respond to the communications from school regarding school programs and children's progress.

Type 3: Volunteering
Parents become directly involved at school in assisting teachers, administrators, and children in classrooms or in other areas of the school. Parents also come to school to support student performances or other events, or to attend workshops or other programs for their own education or training.

Type 4: Learning at Home

Parents respond to child-initiated requests for help as well as to ideas or instructions from teachers for parents to monitor or assist their children at home in learning activities that are coordinated with children's experiences at school.

Type 5: Representing Other Parents

Parents take on decision-making roles in advisory councils or other committees or groups at the school, district, or state level. Parents may become community activists in independent advocacy groups that monitor the schools and work for school improvement.

Adapted with permission from J. L. Epstein (forthcoming). Five types of parent involvement: Linking practices and outcomes. In, *School and Family Connections: Preparing Education to Involve Families.*

The desirability of all five types of parent involvement is well accepted. In fact, the federal government now mandates inclusion of parents as participants, advisors, and knowledgeable consumers of early childhood services in all phases of Project Head Start, in the education of handicapped children (Public Laws 94-142 and 99-457, see Chapter VII), and in agency-administered day care (Kostelnik, Stein, Whiren, & Soderman, 1988). As a result, in early childhood programs across the United States, parents are involved in their children's educational experiences at all levels—from tutors at home to classroom participants, from volunteers to paid employees, from advisors to program decision makers. Those involved include first-time parents, teenage parents, older parents, single parents, dual-career parents, step-parents, parents of handicapped children, and grandparents (Powell, 1989). All of this has come about because we have discovered that children, parents, and programs benefit greatly when parents take an active part in their offspring's early education experiences.

Child Benefits

Most of what each child learns has its beginnings in the home. It is there that children first develop emotions and values, and it is there that they learn to walk, talk, and make sense of their everyday surroundings. Not only do parents teach directly but also indirectly by approving or disapproving, supporting or negating what children learn elsewhere (Bobbitt and Paolucci, 1986). For these reasons, including parents in early childhood programs provides continuity between home and school and enhances children's learning in both environments. For instance, parent participation has been linked to greater awareness and responsiveness in children, to more complex child language skills, to greater problem-solving abilities in children, and to increased academic performance (Eastman, 1988; Meier, 1978; Powell, 1989).

Although these findings are primarily associated with children's cognitive skills, there is evidence that parent involvement in teaching children HPRD-related skills also yields positive results. For example, preschoolers taught basic motor skills by their parents showed significant gains in skill development

and in the levels of motor activity they attained over time (Meier, 1978). These increases were equivalent to those achieved by children taught by professional teachers and greater than those recorded for youngsters in a "free play" group. It has also been observed that children with active parents usually develop active habits related to a healthy life-style (Javernick, 1988). Thus we have good reason to believe that parents can be a positive force in promoting their young children's physical development.

Parent Benefits

Although parental outcomes have been studied less often than child effects, the results of parent involvement on parents is encouraging. Parent participants are reported to gain greater understanding of their children's development and needs, to exhibit greater acceptance of children's individual differences, to find more enjoyment in their children, and to develop more flexible childrearing attitudes (Meier, 1978). Increased feelings of competence and self-worth have also been suggested (Powell, 1989).

Program Benefits

Active participation by parents provides them with more accurate and timely information regarding school aims and strategies. This, in turn, seems to promote parental identification with the school, heightening parents' satisfaction with the program as well as their children's success in it (Bronfenbrenner, 1977; Revicki, 1981). Additionally, as parents become more influential in program decision making and increasingly active in program activities, they are more likely to communicate to children the importance of the programs in which both they and the children are involved (Nedler & McAfee, 1979).

Involved parents also serve as additional human resources to early childhood programs, extending the reach of the program, making it possible for children to receive more individual attention and making available additional knowledge and skills to teachers and administrators (Gilmar & Nelson, 1975; Harris, 1978). Finally, we know that highly involved parents are more likely to support program policies, offer financial assistance, and rally community efforts to promote or maintain the programs with which they are affiliated. For instance, the importance of parents as potential health and physical fitness advocates was vividly illustrated recently when the American Academy of Pediatrics called on parents to lobby for increased, planned physical education activities in their children's early childhood centers and schools.

Barriers to Parent Involvement

With all the benefits accrued through parent involvement, it would seem that both teachers and parents should be eager to engage in the process. Yet, frequently, misunderstandings exist that impede the development of effective home-school relations in general and, in particular, parent involvement in HPRD facets of early childhood education.

One pervasive problem is that parents and teachers may hold images of one another that are not conducive to cooperation. Both, for instance, may feel unwelcome—the parent at school, the teacher in the home—or ill suited to

function in a collegial capacity—the parent as teacher, the teacher as peer. The teacher may be viewed as less helpful and less interested in the family than he or she really is, and school personnel are likely to underestimate the parents' strong desire to be active in their children's education (Hess, Block, Costello, Knowles, & Largey, 1971). For example, less than half the teachers responding to a recent survey made parent involvement a high priority in their classrooms in the belief that such efforts would prove fruitless (Brandt & Epstein, 1989). They believe that today's parents (especially low-income, single-parent, and dual-career families) would be unwilling or unable to become involved in school-related activities. Yet the results of several parent surveys throughout the past decade run counter to this perception. Large numbers of parents (as many as 90 percent) report caring a great deal about their children's performance in school and being interested in learning effective ways to support children's learning on the home front (Epstein, 1986; Lightfoot, 1975; Snow, 1982). Approximately 20 percent of the parents surveyed were already successfully involved, but another 70 percent wanted to become more active in their child's schooling (Brandt & Epstein, 1989).

Lack of school involvement by parents seems to stem from several sources. Some parents hold back because they are unsure of what to do—how to offer support at home or what strategies to use. Others fear that their shortage of formalized teaching skills makes them unsuitable partners in the educational process (Moles, 1982). Still others have been put off because parent involvement is confined to menial tasks or because they are treated as intruders at school (Greenberg, 1989). The most common response to these obstacles is apathy which, in turn, reinforces the stereotypes parents and teachers hold about one another.

Another misperception that undermines parent involvement efforts is the belief that such involvement comes about spontaneously or by luck. On the contrary, we know that the most successful efforts happen as the result of hard work, deliberate planning, and persistent efforts by teachers and parents alike. Unfortunately, many parents lack the skills to negotiate successfully the educational bureaucracy, and few teachers have adequate preparation for working with parents (Greenberg, 1989).

A readjustment of attitudes at school and at home, as well as more concerted efforts to emphasize the partnership aspects of parent involvement, are needed if these misunderstandings are to be corrected. Some programs have risen to the challenge by instituting written policies that make parent participation more visible and more clearly understood. These policies ensure that parents are central to the school program and help staff and parents better understand how parents fit into the educational process. Workshops in which parents and school personnel learn how to improve their skills for working together as well as for working with the children have also helped to alleviate erroneous conceptions (Williams & Chavkin, 1989).

Educators interested in enhancing children's health and physical development must find ways to overcome the traditional barriers to parent involvement documented above. Further, they must dispel certain myths that may cause parents to believe their involvement in HPRD-related activities is unnecessary.

Three common examples are described below.

One myth is that young children get enough exercise in their daily activities to ensure normal, healthy physical development. This is not true. Research on the activity levels of young children has clearly shown that most youngsters do not maintain a level of exercise that is beneficial for cardiovascular health (Gilliam, Freedson, Geenen, & Shahraray, 1981). Subsequent studies have revealed that today's children generally are fatter than children were 20 to 30 years ago, with heart-lung fitness less than that of most middle-aged joggers (Brody, 1984).

A second myth is that children acquire basic motor skills as the result of maturational processes. While maturation may limit the rate and extent to which large motor skills can be learned by young children, few gain mature patterns in these skills merely as a function of getting older (Reuschlein & Haubenstricker, 1985). In reality, children need time set aside for guided instruction in large motor skills and for vigorous activity. Guided physical activity is particularly important at early ages because exercise patterns are established early in life (Hammer, 1975) and vigorous activity is needed for all areas of growth and development (Greenberg, 1980; Seefeldt, 1986). Moreover, early childhood is when many of the basic motor skills emerge, and it is the time when children can benefit from systematic instruction in these skills both from their teachers and from their parents (Werner, 1974; Meier, 1978; Haubenstricker & Seefeldt, 1986).

The idea that children automatically make nutritious food choices and can instinctively select a balanced, healthy diet is another false notion that adults sometimes treat as truth. Actually, children do not have an intuitive "food sense." Rather, children must learn sound nutrition practices (Bond, 1990). Therefore, children require direct and indirect guidance from adults at home and at school in order to develop wise eating habits (Endres & Rockwell, 1980).

Debunking these myths as well as others associated with children's health and physical development is essential if parents are to recognize the significance of their role in promoting children's well being. Facilitating parent involvement in children's early education can be a productive means for achieving this aim.

Characteristics of Effective Parent Involvement Efforts

As educators have become increasingly aware of the benefits of parent involvement as well as the obstacles that sometimes hinder its development, their attention has shifted from answering the query "why?", to exploring the question "how?" Consequently, much of the research of the past decade has focused on discovering variables that characterize effective parent involvement programs. From these studies, four key elements that positively influence active parent participation have been identified. The four are: collaboration, variety, intensity, and individuation. A brief overview of each of these follows.

Collaboration

Collaborative relations between program personnel and parents yield fruitful results for both parties as well as for children. Such relations are most

apt to develop when parents and teachers recognize each other's importance in the life of the child. Since neither school nor family has the resources to take on the entire job of educating the young, it is not in their best interests to attempt to duplicate one another's efforts. Rather, children's education is enhanced when home and school see themselves as distinct entities, performing complementary, interconnected functions (Griffore & Bulboz, 1986). Establishing a working alliance between the two entails forging open, reciprocal channels of communication as well as affirming the authority of parent and teacher within their respective domains (Power & Bartholomew, 1987). Collaborative relations are also fostered when there is shared decision-making control regarding programmatic goals for children and the nature of parent participation (Powell, 1989).

Viewed in this light, parent involvement represents a balance of power between parents and teachers. It is a partnership in which each member is valued and contributes breadth of understanding and depth of knowledge to their deliberations concerning children (Kostelnik, 1989). Parents bring breadth to the partnership by understanding their own child within the context of many different settings—home, neighborhood, church, park, laundromat, grandma's house, and so forth. Teachers provide breadth by understanding, within the school context, many different children. Knowing their own child thoroughly comprises the depth offered by parents, while depth for teachers comes from their knowledge of child development, program content, and educational strategies. When parents and teachers combine their knowledge and understanding along these two dimensions, collaboration becomes a reality.

Variety

Parents differ in the extent to which they are willing or able to take part in school programs and in what manner they wish to be included. Consequently, effective parent involvement encompasses a variety of means for parents to participate and does not require all parents to be involved in the same ways or at the same time or to the same degree (Becher, 1984). Variety can be considered in terms of the kind of contacts that occur between home and school, the format they take, who starts them, for what purpose exchanges are made, where they occur, how frequently they take place, the resources required for participation, and the level of response necessary for success to be achieved. These variations are outlined in Table 2.

Table 2
Variable Characteristics of Parent Involvement

It is possible to combine variables within each characteristic as well as to create combinations among them.

Kind of Contact

Predetermined Agenda—or—Informal Structure
Scheduled—or—Spontaneous
Face to Face—or—Indirect

Format

Written—or—Verbal
Goal-directed—or—Open-ended
Presentation—or—Discussion—or—Experiential
Large Groups—or—Small Groups—or—Individual

Purpose

Provide Input—or—Elicit Input—or—Collaborate
Build Relationships—or—Establish Goals/Strategies—or—
Change Goals/Strategies

Initiator

Child—or—Parent (family member)—or—
School Personnel (teacher, specialist, administrator)

Location

Home—or—School—or—Community

Frequency

One-time Event—or—Several Times—or—Continuous

Role of Parent

Receiver of Information—or—Program Supporter—
or—Audience—or—Home Tutor—or—
Classroom Participant—or—Colearner—or-
Decision Maker—or—Advocate

Resources Required

Time and Energy (ranges from little—to—much)
Skills (ranges from few—to—many;
from general—to—specialized)

The more variety the better. This is true both within a single home-school interchange and across the whole array of contacts that transpire throughout the child's life in the program. When a broad mixture of parent involvement opportunities take place, programs demonstrate their interest in and acceptance of many different kinds of families. Also parents receive visible proof that they may contribute according to their own preferences, talents, resources, and degree of comfort with the interface between home and school (Berger, 1987).

Intensity

There are strong indications in the literature that the greater the number of contacts between parents and the program and the more frequently they occur, the more likely it is that parent participation results will be positive (Lazar, 1981; Powell, 1989). Thus the adage "more is better" would seem to apply. This may suggest that there is a certain duration of contact necessary to promote the development of trusting relationships between parents and school personnel (Powell, 1989) or that when opportunities for involvement are numerous, families are more easily able to find entrees to the program that better suit their needs and interests. In addition, it has been found that parents generally do not feel a part of their child's education unless the school or center places particular emphasis on involving parents (Gotts & Purnell, 1986). Frequent, varied contacts over time conveys the message that parents are valued by the school and that their inclusion is not simply tolerated but actually welcomed and expected.

Individuation

Existing research suggests that educational programs are most likely to elicit a positive response from parents when opportunities for participation are tailored to accommodate the needs and perceptions of the particular families served (Eastman, 1988). There is no one formula for parent involvement and no single program that can be generalized successfully to every population. Instead the best outcomes emerge when there is a match between what programs set out to do and what parents want; when there is congruence between the strategies implemented and those parents feel receptive to; and when program designers consider parental constraints such as child care and transportation needs or employment obligations (Berger, 1987; Powell, 1989). Once this process is underway, the chances for collaboration improve, and as collaboration becomes greater, so, too, do opportunities for individuation.

Clearly, educators can facilitate parent involvement by designing programs that take into account collaboration, variety, intensity, and individuation. These broad concepts are operationalized when school personnel implement the following strategies.

Effective Parent Involvement Techniques

Build rapport with parents. Greet parents by name and smile when you see them. As parents drop off or retrieve their children, say at least a few positive words regarding each child's day. What you communicate nonverbally will be as important as what you convey in words. Listen attentively, make relevant comments when parents talk to you, and thank parents for taking the time to chat. If you frequently appear rushed, parents will be hesitant about approaching you. If your eyes are constantly darting elsewhere when talking with them (your papers, the door, the clock) they will get the message that you are not listening and that what they have to say is unimportant (Kostelnik et al., 1988).

Get to know parents as individuals. Communicate with them on a one to one basis as well as in groups. Find out something about each parent's aspirations, concerns, special interests, skills, and hobbies. This might be accomplished through informal contacts as well as by having parents fill out a personal interest form for you to keep at school.

Remember that administrators as well as teachers influence whether or not parents feel welcome at school. Principals or directors who know parents and children by name, who are visible at times when parents are in the building, and who can make positive comments to parents about their children, do much to enhance school climate and to promote comfortable feelings among parents.

One- or two-line notes written on the spur of the moment and sent home with the child demonstrate your interest in both the child and the parent (Berger, 1987). A child's first journey to the top of the climber, or an enthusiastic creative movement experience, or the child's pride in walking the balance beam unaided are all good reasons for a short, handwritten note. Once or twice a year, include an instant picture of the child happily engaged in an HPRD-related activity as a keepsake of the child's early school experience.

Develop written policies for your classroom that clearly emphasize the importance of parent involvement. Identify benefits to children, parents and the program as a whole. Provide specific guidelines for the form such involvement could take and how home-school contacts might evolve. High-

light suggestions for parent participation related to the HPRD aspects of the early childhood curriculum. Send these policies home to parents and go over them during a home visit or school orientation.

Make frequent attempts to include parents in children's early education. Begin by planning several simple forms of contact throughout the year rather than focusing on a single colossal event. Choose to offer some one-time involvement opportunities as well as a few that require sustained participation over time.

Create many different ways for parents to become involved in the early childhood program. Remember to vary the kind of contacts that are made, the format they take, their purpose, and location. Also vary what role parents will assume, as well as the time, energy, and physical resources required to participate. In addition, make sure to create involvement opportunities related to all five types of parent involvement. A chart depicting a few examples of practices to support each type is presented in Table 3.

Table 3
Examples of Practices to Promote the Five Types of Parent Involvement

Type 1: Parenting

Provide suggestions for home conditions that support HPRD-related learning.

Provide workshops, videotapes, computerized phone messages on parenting and HPRD issues.

Type 2: Communicating

Conduct conferences with every parent at least once a year, with follow-up as needed.

Make available translators for non-English speaking families.

Send home anecdotes regarding children's progress and participation in HPRD activities for parents to review and comment on.

Make available a parent library containing books about children's physical development, health, nutrition, and fitness. Include books that contain movement games, snack ideas, and topys to be made from simple household materials.

Type 3: Volunteering

Develop a school volunteer program whose focus is on supporting HPRD-related activities.

Create a parent room or parent club for volunteers.

Conduct an annual postcard survey to identify all available talents, times available, and interests of parent volunteers.

Type 4: Learning at Home

Provide information to parents on HPRD skill development in young children.

Provide calendars that describe simple, daily HPRD activities that parents can try at home with their children.

Make available a toy lending library for parent use that includes HPRD-related equipment.

Conduct workshops in which parents learn how to teach specific motor skills via home activities.

Type 5: Representing Other Parents

Encourage parent participation and leadership on center or school advisory councils or committees such as curriculum or playground improvement.

Adapted with permission from J. L. Epstein (forthcoming). Five types of parent involvement: linking practices and outcomes. In, *School and family connections: Preparing education to involve families.*

Familiarize parents with the HPRD-related assumptions, goals, and expectations of your early childhood program. Integrate HPRD-related content into a beginning-of-the-year parent orientation as well as in any written materials sent home describing the curriculum. Discuss physical development and health-oriented goals for children, offering examples of related classroom activities parents might see or hear about. A sample list of HPRD-related goals for children ages 3 to 5 is presented in Table 4.

Table 4
Sample List of HPRD-Related Goals

Our ultimate goals are for children to achieve mastery of the environment through improved body control and to develop attitudes, knowledge, skills, and behaviors related to maintaining, respecting, and protecting their bodies.

In our program children will have opportunities to:

- gain confidence in using their bodies
- develop awareness of the location of their own body parts
- develop spatial awareness (understanding of personal and general space, and direction)
- engage in a variety of activities that require balance
- engage in activities that require coordination
- sustain a vigorous motor activity over time in order to develop endurance
- engage in a variety of activities that require flexibility
- engage in motor activities that require agility

135

- use their whole bodies in appropriate activities to strengthen muscles and muscle groups
- develop basic motor skills such as jumping, hopping, throwing,
- kicking, striking, running, or catching
- coordinate finger and eye-hand movement
- control the movement of their bodies in relation to objects
- develop a positive attitude about their bodies
- learn how to keep their bodies clean
- learn how to keep their bodies fit
  learn and practice good nutritional habits
- learn appropriate safety procedures for school, home, and neighborhood
- discriminate between good and poor health/safety practices

Elicit input from parents regarding HPRD goals for their children. Talk with parents about their children's activities and habits at home as well as what skills or behaviors they would like to see further developed. Give parents a short list of HPRD-related goals for children. Ask them to rank these goals in relation to their own child and according to their own perceptions of which are least important and which are most important. Collect the information and use it in designing physical development and health-based activities for the classroom. Refer to the parents' list periodically when discussing the child with the parent throughout the year.

Highlight HPRD-related content in periodic newsletters sent home to parents. Such content could be integrated into an already established newsletter or could provide the impetus for initiating this practice. Summarize in easy to understand language interesting fitness, motor skills, or nutrition facts. Describe one or two aims of your program regarding children's physical development and health as well as a few school activities that support these goals. Offer specific, practical suggestions for ways parents might extend or reinforce highlighted skills at home. Make an effort to provide newsletters to noncustodial parents as well as to those with whom the child lives.

Institute an open-door policy within your program. Invite parents to visit your classroom frequently and without an appointment. Also provide parents with a schedule of your daily routine, noting both indoor and outdoor times in which they might participate with children in open-ended HPRD-related activities such as long-jumping on the playground, tossing bean bags through a plastic hoop in the classroom, or joining children at snack-time.

Plan small HPRD-related gatherings of children and parents at locations in which low-income or minority families will feel at home (Greenberg, 1989). A community center, a nearby playground, or park might provide appropriate alternatives to school.

Design at-school HPRD parent activities to accommodate the family's varying life-styles and schedules. Repeat events more than once, vary meeting times, provide child care and transportation networking for parents who need a ride.

Invite parents to HPRD-related workshops that involve both them and their child. Consider using a format in which children receive child care half of the time while their parents discuss HPRD-related information with other

parents and staff. The second half of the session could be devoted to parents and children working together, practicing skills, or creating make-it/take-it items for use at home. A sample agenda for one such workshop is offered in Table 5.

Table 5

Saturday Morning
Parent-Child Motor Skills Workshop

9:00 - 9:15 AM	*Arrival:* Children are taken to supervised child-care rooms.
9:15 - 10:15 AM	*Discussion:* Dr. I. Amfit talks with parents about the development of motor skills such as throwing, catching, and skipping.
10:15 - 10:30 AM	Parents pick up preschool-aged children from child-care rooms, receive name tags, and go to first activity station.
10:30 - 11:30 AM	*Activity stations*: Parents and children rotate from station to station every 10 minutes—approximately 6 families per station. 1. *Make it/Take it:* Parents and children choose to make one or more gross motor items for use at home—nylon paddles, milk jug scoops, newspaper balls; also provided are instructions and activity ideas for: jump ropes, suspended balls, streamers, and pillow balls. 2. *Throw/Catch Activities* 3. *Striking Activities* 4. *Gallop/Skip Activities* 5. *Balance Activities* 6. *Nutritional Awareness Activities and Snack*
11:30 - 11:40 AM	*Closing:* All participants gather in the rainy-day room for a large group song with movement.

This workshop will be repeated on Friday evening from 7 to 9 PM.

Establish clear guidelines for parent volunteers regarding their responsibilities in the classroom. Offer specific suggestions for what they are to do and a rationale for delegated responsibilities. Provide a few written directions to which they can refer during the day or demonstrate particular activities to be implemented that day. Talk with parents about how to handle some potentially disruptive situations and what to do when their own child is involved. If this latter issue is ignored until it happens, some parents may fail to act or may

overreact out of embarrassment. Neither response is conducive to parents' feeling comfortable at school.

Give parent volunteers in the classroom meaningful tasks to carry out. Helping children practice their balancing skills, engaging children in catching and throwing, assisting children at the snack table are among useful tasks for the parent-volunteer. Avoid requesting them only to do busy work like washing the lunch dishes or cutting straws for a future fine motor activity. If parents are to become partners in the educational process, they must be given real responsibilities from which they can derive genuine satisfaction.

Carry out periodic child study sessions. Together with parents, observe children's physical skills, brainstorm activity ideas for school or home, and engage in mutual problem solving related to children's health and physical development.

Create home-based alternatives to at-school participation. For instance, ask parents to carry out at-home HPRD-related activities for which you have provided specific, yet brief, written or audio taped directions. Then invite parents to critique how easy the activity was to do, as well as how much they and their children enjoyed it. Other tasks might include preparing materials at home (i. e., snack menus, tooth brushing chart giving appropriate steps, targets for tossing), making arrangements for field trips and resource people, coordinating parent discussion groups, finding resource materials at the library, comparing prices of creative movement or gross motor equipment at local stores, or reacting to HPRD activity plans that eventually will be used in the classroom.

Help parents anticipate typical developmental changes in children's physical skills and other health-related behaviors. Knowing what to expect in advance empowers parents to respond appropriately when such changes occur and makes them more confident teachers of their own children. For instance, parents are often concerned when preschoolers, who are not growing as rapidly as they did in infancy, eat less than they did as toddlers. Finding out that preschoolers' smaller appetites are a result of normal child development helps to allay parental fears that this natural reduction in food intake is somehow their fault or indicative of a dire problem. A note home to parents, a brief discussion in the classroom newsletter, a small-group discussion or an organized workshop on a related topic are a few ways to get this kind of information home. Chatting informally with parents individually and frequently is another valuable way to convey developmental information to parents. Such contacts are especially useful since teachers can provide appropriate information and answer questions with a specific child in mind.

Arrange opportunities for parents to talk with one another informally. Plan some casual get-togethers whose primary aim is to give parents an opportunity to build their social networks and to commiserate with their peers. Make sure to include unstructured break time to facilitate parent-to-parent conversation during more formally scheduled events. There is strong evidence that these informal exchanges are every bit as valuable to parents as the regularly scheduled program (Powell, 1989).

Give interested parents opportunities to participate in policy-making decisions. Decisions could include creating school-playground rules, developing snack guidelines, or generating ideas for specific health practices. Collabo-

rating with parents in evaluating HPRD-related classroom materials as well as commercially available equipment or programs are other appropriate ways of giving parents decision-making powers in early childhood education.

Stay in touch with parents who seem unresponsive. Avoid stereotyping them as uncaring or impossible to work with. Instead, remain pleasant when you see them. Periodically, send notes home letting parents know about their children's positive participation in school-based health and physical development activities. Continue to offer simple, easy to carry out suggestions for home-based participation. Keep the input from school as positive as possible and make few demands. You might not see immediate results; however you could be contributing to a more favorable impression of the educational process for that parent. This in turn could serve as the foundation for greater participation later in the child's school career.

Ask for evaluative feedback from parents throughout the year. Let parents know that their opinions count by providing numerous opportunities for them to evaluate your performance as well as the early childhood program. Suggestion boxes near the school entrance, short questionnaires sent home that can be returned anonymously in a postage-paid envelope, written or verbal evaluations administered at the end of workshops and other school events, and telephone surveys conducted by teachers or administrators are some methods that have prompted parent input. Another effective strategy is to hold parent/teacher forums once or twice a year at school. These regularly scheduled, informal gatherings are designed to give parents and teachers a chance to evaluate the program together. Loosely structured around a broad topic, such as personal safety issues or children's fitness needs, they provide a vehicle for mutual exploration of ideas and strategies. Moreover, parents can ask questions and make suggestions for changes or additions to the program in an atmosphere where such communication is clearly welcome.

As a follow-up to these evaluation efforts, let parents know you intend to act on some of their suggestions. Later, inform parents (via newsletter and/or at a group meeting) of the changes that have come about as a result of input received from them.

Show genuine pleasure in every parent's attempts, no matter how small, to support their children's health and physical development. Continually let parents know how much you appreciate the time and effort they put into their child's education, not just because their help allows you to do a better job, but because the children benefit so greatly (Berclay, 1977). Remember, no form of recognition can replace a personal thank-you. In addition, parent contributions could be acknowledged in classroom newsletters or in community newspapers. Also parents may be officially recognized at school events or with tangible tokens of appreciation such as pins, certificates, plaques, or thank-you notes from the children (Kostelnik et al., 1988).

Summary

This chapter has described the aims and benefits of parent involvement in early childhood education. It has also identified concerns and strategies for teachers interested in promoting children's health and physical development. The techniques described here are by no means exhaustive. Rather, they serve to illustrate the broad repertoire of skills needed by school personnel as they strive to work more effectively with parents. While many questions remain as to how to reach and involve all parents, particularly low-income and minority parents, there is no doubt that the inclusion of the child's family will continue to remain a high priority among teachers of young children. Our job as early childhood educators is to keep investigating alternative methods of parent involvement and to welcome parents as full-fledged partners in the educational process.

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Parent Involvement Resources

Appalachia Educational Laboratory
P.O. Box 1348
Charleston, WV 25325
(304) 347-0400

Center on Parent Involvement
Johns Hopkins University
3505 N. Charles Street
Baltimore, MD 21218
(301) 338-7570

Cornell University Family Matters Project
7 Research Park, Cornell University
Ithaca, NY 14850
(607) 255-2080 or 255-2531

Information Service
National Association for the Education
of Young Children (NAEYC)
1834 Connecticut Avenue, NW
Washington, DC 20009
1-800-424-2460

National Coalition for Parent Involvement in Education
National Education Association
1201 16th Street, NW, Room 810
Washington, DC 20036

Parent Involvement in Education Program
San Diego County Office of Education
6401 Linda Vista Road, Room 407
San Diego, CA 92111-7399
(619)292-3500

Southwest Educational Development Laboratory
211 E. Seventh Street
Austin, TX 78701
(512)476-6861

XII

Health and Safety Education for Caregivers

Lloyd M. Hofer, MD, MPH, FAAP

Introduction

Caregiver—A unique and trusted position.

The person who invests his or her life caring for children can have a major impact on developing and encouraging health habits for both the child and family. The caregiver is selected by parents based on a number of factors, such as convenience of location, facilities, the cost of day care, and the reputation of the caregiver in the community. The key factor in selecting a caregiver is the parents' expectation and belief that this caregiver will be a good parent to their child while the biological or adoptive parents are away.

Parents often assume that caregivers are knowledgeable concerning health, safety, and physical and social developmental areas. The parents of the 1990s will rely increasingly on the caregivers' advice and judgment concerning the health of their children. There are several reasons for this increasing reliance including more parent time required at work, the noncoverage of health maintenance visits for children by many insurance companies, and less contact with extended family caregivers who are experienced with child rearing.

The Alabama Department of Public Health conducted a survey of 65 day-care center directors, 300 caregivers, and 900 parents regarding health and safety concerns and needs (Alabama Department, 1990). The results of these surveys are presented in the following sections.

Day-care Director Survey

Results of the day-care director survey show their top health and safety concerns are colds and coughs; illness recognition; accidents; ear infections; and diarrhea. Other results indicated that:

- Center directors rely most frequently on the child's personal physician to answer medical questions concerning the individual child's health. County health departments are utilized second in frequency.
- There is no one reference book used commonly for health and safety education by the center directors.
- While most caregivers are employed full-time, the average employment duration at the center is 2 years or less.

Caregiver Survey

A survey of Alabama caregivers of children in day care indicated that while parents seldom ask them for health information, the most common topics about which information is requested are growth and development, psychosocial problems such as toilet training, immunization requirements, illness prevention, and when the child needs to visit a doctor for illness. Unfortunately, caregivers often do not have definitive sources for their own information. Caregivers overwhelmingly receive their health and safety information from the director of their center rather than from reference books, participation in conferences, or from contact with the general medical community.

Caregivers listed their top health and safety concerns as spread of illness, cardiopulmonary resuscitation, first aid, recognizing signs of illness, and normal growth and development of children. Furthermore, the caregivers surveyed prefer to receive educational information and training on health and safety through workshops and conferences or through short talks by health professionals.

Parent Survey

Parents with children in day-care centers were surveyed to determine their concerns for their children's health and safety. The data also indicated the illness patterns of children attending day care, as perceived by parents. Caregivers who are aware of the perceptions and needs of parents are equipped to address them. This in turn promotes mutual satisfaction of the parent and the caregiver.

The results of the health and safety survey of parents with children enrolled in day care show the following:

- The five top health and safety parent issues are cardiopulmonary resuscitation (CPR), first aid, spread of illness, nutritional topics, and normal growth and development of children.
- Parents prefer to receive health and safety information primarily through pamphlets, books, and other printed materials with videos being the next choice of presentation.
- The most common health problems for children less than 2 years of age are ear infections, colds with fever, and diarrhea. These three problems are most likely to be associated with three or more episodes per year of illness. After age 2, throat infections closely follow ear infections, colds and fever, and diarrhea illnesses.
- Eighteen percent of parents perceive their children as heavy for height and age.
- Ten percent of children have been hospitalized overnight for illness or injury in the past year.
- Of children under age 5 years, only 44 percent ride in a child safety car seat when a passenger in the car.

Summary of Results

Based on these three surveys, it was concluded that:

- Parents, caregivers, and directors are very interested in health and safety issues.

- Acute infectious disease recognition and management, accidents, and CPR/first aid are topics of interest for parents and caregivers.
- Child physical-psychosocial growth and development are of considerable interest toparents. Both day-care directors and caregivers value on-site talks by professionals at their center on health and safety topics.
- There is substantial personnel staff turnover in day-care centers.
- This makes training of caregivers concerning health and safety issues a necessary part of orientation and review.

Note: Although directors and caregivers were considered two separate populations for the survey purposes, the term *caregiver* will refer to any individual (including the director) who takes care of children in a day-care center.

The Caregiver as a Role Model

Caregivers influence the health and well-being of children and families through their personal example, by practicing good health behaviors, by setting and following rules to reduce illness and injury, through observing children closely, and through formal instruction.

The caregiver's health beliefs, health behaviors, and personal hygiene standards are important models that children observe and imitate. The personal habits of every caregiver directly influence the promotion of health in the day-care setting.

For example:

Hand-washing. It is impossible to wash one's hands too often when working in a day-care setting. Frequent hand washing is a must to protect the caregiver from germs and to interrupt spread of germs. Fingernails should be short and hand jewelry, under which germs can hide and grow, should be minimal. Frequent hand washing is the most important health behavior, but it is easily forgotten in the hurried day-care setting.

Smoking. Adult cigarette smoking has been found to contribute to the incidence of upper respiratory infections and ear infections of children exposed to smoke. The best health policy for any center is to be smoke free. Being smoke free sets a good example to children, who model the behavior of adults they respect.

Role Modeling. Modeling of healthy behaviors, such as physical activity, not smoking or using tobacco, and using seat belts in the car, influences both parents and children. The caregiver's good example not only will keep him/her healthy, but encourage similar behaviors in other day-care givers and in clientele.

The Role of the Caregiver in Promoting Healthy Development

The caregiver setting is an excellent place to help children develop good health habits that will last a lifetime. A few of the many examples are:

- Wash the children's hands before eating, after toileting or handling soiled surfaces, and after handling nasal secretions or blowing the nose.
- Teach children to cover their mouths when coughing or sneezing.
- Help children brush their teeth after eating.
- Encourage and provide healthy snacks.
- Promote safe exercise. (Specific information regarding physical activities and motor development are discussed elsewhere in this monograph.)

The caregiver is a respected and trusted "family member." Therefore, in addition to general health and safety, caregivers can promote the child's mental and emotional health by helping parents recognize some normal developmental landmarks of childhood. Recognizing these landmarks encourages parents to have reasonable age-appropriate expectations for their children.

All caregivers know there is a significant difference in what an 18-month-old and a 2-year-old can do, and a difference in their temperaments as well. Caregivers can help parents by mapping out significant developments for their child, including speech and language development. For example, a 12-month-old child can usually sit alone, crawl, walk, and grasp objects with two fingers. In the area of language development, a child age 15-24 months can usually say short sentences. The caregiver is in a position to observe development and discuss with parents areas of progress or concern.

Health and Safety Requirements for Day-Care Programs

While day-care programs have requirements for health and safety that are set by state agencies, such as immunization requirements, each individual day-care program needs additional policies, such as when to exclude and readmit children to the center. These policies are beneficial, yet implementing them, particularly when faced by a parent who asks staff to bend the rules, creates stress and difficulty. What is a caregiver to do? Be a "saint" and bend the rules, or be a "scrooge" and enforce these health and safety policies.

Rules and policies for each center are best set with the input of a physician or public health advisor. Rules that are the center's policies rather than arbitrary personal rules will help in promoting compliance. The caregiver should work with the child's doctor, or the center's medical consultant, to make policies that best fit each center's staff capabilities and children's needs. The policies may cover (a) taking temperatures (rectal or other); (b) giving medications (over the counter, prescriptions); (c) excluding ill children from the center; and (d) readmitting ill children.

A few rules consistently enforced are preferable to many rules randomly enforced. Just as parents set rules and their children test the rules to see if the rule is important and how far they can go, parents may test the day-care center rules. As they see the center's illness and readmission policies consistently followed, they are assured the center staff is keeping their child healthy and safe, and they respect this.

The caregiver should feel comfortable in the recognition and treatment of first aid problems. The American Red Cross has developed a new program designed for caregivers that includes first aid and infection and injury prevention. This program will be available at most local American Red Cross chapters.

Development of judgment concerning when a child is sick, how sick the child is, and what should be done requires training and experience. Caregivers observe many children every day, and their observations of each child are especially helpful. Caregivers should spend 10-20 seconds each day to fill in a brief observational list for each child. This checklist will be invaluable in assessing the child.

Illness Recognition

It is said that good doctors know what they know, know what they don't know, and know when to get help. The same can apply to good caregivers. The following examples are only general guidelines. More specific information regarding assessment and intervention is discussed elsewhere in this monograph.

Fever. The usual pattern for fever is for a child's temperature to be lower in the morning and higher later in the day. Therefore, if a child presents to the center with a high temperature in the morning, he/she will almost always get worse during the day and these children should not be admitted. This protects them, as well as prevents germs from spreading to others. See Appendix A, Fever Sheet, and Appendix B, Colds and Congestion, at the end of this chapter.

Liquids. Watch the child's intake of food and fluids and output (the number of stools and number of urine voids a child has). A child with a fever or diarrhea needs more fluids than usual. So when a child is not drinking much or is having more frequent watery or loose stools, dehydration is possible and is serious. If a child acts listless and his/her mouth and eyes look dry, or if staff are concerned that dehydration is likely, notify parent or doctor at once.

Rashes. A child with any skin rash, especially one who acts sick and/or has a fever, needs to be seen by a health professional as soon as possible.

Illness recognition is easier when the caregiver looks for signs of illness every day in every child. The Illness Observation Sheet (Figure 1) is a convenient way to look for illness. This form should be maintained for each child daily. Although children are usually healthy, reviewing and recording observations daily helps polish skills as a medical observer. The Illness Observation Sheet should be shared with parents each week, or, if the child appears sick, a copy provided to the parent that day, with a copy kept for the center's records.

Figure 1
Illness Observation Sheet

Child's Name: _____ Date: _____

Problems: check all that apply.

____ **Temperature:**
to touch____ oral____ rectal____

____ **Breathing:**
fast____ sounds congested____ wheezing____ difficult____

____ **Eye: left____ right____**
red____ itch____ drainage____

____ **Ear: left____ right____**
pulling at____ drainage____ pain____

____ **Nose: drainage color:**
clear____ cloudy____ yellow____ green____
bleeding____ thin drainage____ thick drainage____

____ **Throat:**
red ____ sore____ hoarse____

____ **Chest: cough:**
dry sound____ loose sounding____ deep chest____

____ **Rash:**
diaper ____ area ____ other____

____ **Vomiting** (not spit up): Number of times____
small amount____ large amount____

____ **Diarrhea:** Number of stools____
Blood: yes____ no___
Color: brown ____ green ____ yellow____
Consistency: watery____ mostly formed____
Amount: large amount ____ small amount____

____ **Injury:** where in body_____ what happened_____

____ **Urine:** more than usual ____ less than usual____

____ **Stomach Ache**

____ **Intake** - Amount of liquid:
more than usual ____ less than usual____

____ **Activity:**
less active____ acts hurt____ sleeping a lot ____ other_____

____ **Taking any Medicines:** no ___ yes___

____ **Other Problems**_____

Involving the Health Professional in Caregiver Education

The public health community and private physicians, especially pediatricians, are capable of and interested in supporting the caregiver and sharing their

knowledge and skills regarding illness and health. In fact, physicians, nurses, and other health care professionals working with children are frequently asked by parents, "Can you recommend a good day-care provider"? Many pediatricians recommend centers based on their personal experiences with how day-care staff handle medical (health and safety) problems, both preventing problems and handling those problems that occur.

To receive technical health and illness information, and to increase referrals to the center, caregivers must involve the medical community. Here are a few suggestions.

- Visit as many pediatricians, family practitioners, and general practitioner's offices in the community as possible to share the center's medical/illness and safety protocol with them and to ask for their suggestions.
- Invite community physicians, public health department nurses, or hospital nurses to the center to present a 15-20 minute discussion of a topic of interest to the staff. Examples: treatment of stings, bites, and heat-related illness (summer); poisoning, holiday safety, and allergies (fall); cold-related injury and common winter infections such as ear infections, sore throats, bronchitis (winter); water safety, allergies, poisons, playground safety (spring). (Speakers will appreciate a thank-you note or a cup with the day-care center's logo.)
- Hire a physician as consultant to the day-care center. While many physicians will decline compensation, they will nevertheless appreciate the offer very much. The physician consultant should be familiarized with the center and its unique needs.
- Visit the county public health departments have to talk with their staff. Most public health departments have environmentalists who can help with safety, food service, sanitation; nurses to help with disease/illness questions, immunizations, examinations; nutritionists to help with menus and nutritional information and the Women, Infants, and Children (WIC) food program.
- Develop a policy/procedure manual. There is no need to reinvent the wheel! Existing procedures used by other centers may be modified. Whether starting from scratch, or adopting an existing manual, add to it one policy at a time as new illnesses or health and safety situations are encountered. (See resource list at the end of this chapter for suggestions.)
- Attend relevant seminars in the community. If none are available, contact the state chapter of the American Academy of Pediatrics and ask them to help by providing speakers for seminars organized by the caregiver staff. Local community sponsors for seminars and workshops might include (a) the American Red Cross; (b) community organizations such as the Chamber of Commerce or United Way organizations; (c) the state agency responsible for day-care regulations; (d) the health department.
- Ask for permission to use handout sheets that have been developed by physicians for use in their medical practices.

Appendix A
Fever Sheet

Fever is a response to an infection and is a helpful indicator that a child is ill. Some serious illnesses are associated with little fever, and minor illnesses may have a great deal of fever. Therefore, the degree of fever does not always indicate the seriousness of the illness. The concern is with how ill the child appears rather than how high the fever is. Children tolerate fever better than adults do. However, any temperature equal to or greater than 101° Fahrenheit (F) rectally in a child less than 6 months of age needs to be brought to the doctor's attention immediately.

What is a High Temperature? A child's normal temperature varies within a range of 97° to 100.5°F during the day and night. Therefore, temperatures above 98.6° are not considered a fever until they are above 100.5°.

Taking a Temperature. Take rectal temperatures or oral temperatures only! The rectal temperature is 1 degree above the oral temperature of the body. Do not use temperature tapes or put the thermometer under the arm because the temperature varies too greatly for accurate use.

How to Take and Report a Child's Temperature

Rectal.

1. "Shake down" the thermometer until the reading is below the arrow.
2. Apply a small amount of oil or petroleum jelly to the thermometer bulb tip.
3. Insert bulb of the thermometer 1 inch into the rectum. Rest the hand holding the thermometer against the baby's bottom. If the child moves suddenly, your hand and the thermometer will move with her/him and prevent accidental injury.
4. Keep the thermometer in the rectum for 3 minutes.
5. Read the temperature recorded on the thermometer. Report the temperature accurately. For example, 100.5° is not one hundred and five, it is one hundred point five. 105.0° is one hundred and five point zero.

Oral.

1. "Shake down" the thermometer until the reading is below the arrow.
2. Insert bulb of the thermometer under the child's tongue.
3. Keep the thermometer under the tongue for 3 minutes.
4. Read the temperature recorded on the thermometer (see step 5 above).

Treatment. Not all high temperatures require treatment. Children may have temperatures of up to 102° for several days without feeling bad or acting sick. Antibiotics do not control fever unless the fever is caused by a bacterial agent. Virus infections may cause fever but are not helped by antibiotics. Repeated use of antibiotics given for fever may change your child's natural protection and make him/her more susceptible to infection.

- Encourage plenty of liquids—Popsicles, Pedialyte, Gatorade, 7-Up, Jell-o water.
- Dress child lightly in loose clothing so as not to hold fever in.

- Give lukewarm baths. Place the child in the bathtub with the water level between the child's breast and navel. For 45 minutes to 1 hour, wet the child with a washcloth. This will help to lower the temperature 1-2 degrees and help him/her feel better. If, while soaking, the water warms up (test with your elbow), add some cool water to restore the water temperature to lukewarm. If the water turns too cool (test with elbow), add some warm water to keep the temperature to lukewarm. Dry child after bath and dress lightly. The soaks may be repeated as often as necessary to keep your child comfortable. NEVER leave a child alone in the bathtub!!!

Acetaminophen. (Tempra, Children's Tylenol, Children's Panadol, Children's Anacin 3). Acetaminophen is recommended for treatment of fever in infants, children, or teenagers. If an overdose of acetaminophen is suspected call the Poison Center or a doctor immediately.

Age	Approximate Weight Range	Dosage Drops 80 mg	Dosage Syrup 160 mg	Dosage Chewables 80 mg
Under 3 mo.	Under 13 lb	1/2 dropper	1/4 tsp	—
3-9 mo.	13-20 lb	1 dropper	1/2 tsp	—
10-24 mo.	21-26 lb	1 1/2 dropper	3/4 tsp	—
2-4 yr.	27-35 lb	2 droppers	1 tsp	2 tablets
4-6 yr.	36-43 lb	3 droppers	1 1/2 tsp	3 tablets
6-9 yr.	44-62 lb	—	2 tsp	4 tablets
9-11 yr.	63-79 lb	—	2 1/2 tsp	5 tablets
11 yr.	80-89 lb	—	3 tsp	6 tablets
12+ yr.	90 lb & up	—	3-4 tsp	6-8 tablets

Dosage may be given every 4 hours as needed but not more than 5 times daily.

Aspirin may increase the risk of developing Reye's Syndrome. Reye's Syndrome is a rare but serious disease than can follow influenza (flu) or chicken pox in children and teens. ***ASPIRIN IS NOT RECOMMENDED FOR TREATMENT OF FEVER.***

Will Fever Cause Convulsion and Brain Damage? Fever does not cause brain damage in children. Approximately 1-2 percent of all children may have a convulsion with fever despite adequate fever control. The priority is to protect the child from injury, and to notify a doctor at once. These spells are frightening and are usually outgrown; they cause no permanent damage to the brain.

Fever is not a cause for panic. The best therapy for the hot child is a cool parent. If any questions or problems occur, contact a physician so that the cause of the fever may be detected and proper treatment begun.

Appendix B
Colds and Congestion

Nasal Congestion is a common problem for infants, toddlers, and older children. Congestion may be caused by many viruses, allergies, or air pollutants like cigarette smoke. Children defend themselves by producing mucus. Treatment involves helping to clear the mucus and to keep the child comfortable. Colds are viral infections that occur at all ages. It is not unusual for a young child to have six colds each year. During the winter months, heating systems dry the air, which increases congestion problems.

Cold Symptoms may include (a) decreased appetite, (b) a general rundown feeling with less play and more fussiness, (c) nasal congestion, (d) red or itching eyes, (e) sore throat, (f) enlarged neck lymph nodes, (g) muscle aches and pains, (h) cough, and (i) headache. Colds last 7-10 days with some symptoms lasting longer.

Most colds can be treated at home without difficulty. Notify the doctor if any of the following symptoms are present, or if there are other questions.

- Child seems very sick
- Temperature of 103° rectal (101° if the child is under 4 months)
- Fever for more than 3 days
- Persistent cough that awakens child from sleep
- Difficulty breathing, significant changes in breathing pattern, or wheezing
- Earache, chest pain, or foul smelling nasal discharge, eye discharge, or pain
- Other symptoms such as diarrhea, vomiting, extreme irritability
- Colds that last more than 10 days or 2 weeks

Treatment of colds and congestion is designed to make the child more comfortable while his/her body fights the cold virus.

- Fever—Use acetaminophen (Tylenol, Tempra).
- Congestion
  - Vaporizer—Use a cool air vaporizer or cool air humidifier at bedside to loosen mucus. Clean the vaporizer daily.
  - If the child sounds "snorty," use salt water nose drops (AYR or Ocean Drops) or make drops with 1/4 teaspoon salt in 1/2 cup of water. Instill the drops gently with a plastic dropper several times a day and before meals to loosen mucus. Gently suction any visible mucus from nostrils using a nasal rubberbulb suction. Remember to let the child catch her/his breath between suctionings. Suction gently as needed.
- Liquids—Encourage clear liquids (Gatorade, soda, Pedialyte).
- Activity—A good principle is to keep the child at home for one additional day after he/she is without fever before returning to school or day care. It is difficult to limit a child's activities, but hard playing should be avoided.

References

References identified with an EJ or ED number have been abstracted and are in the ERIC database (those with an SP number are being processed for inclusion). Journal articles (EJ) should be available at most research libraries; documents (ED) are available in ERIC microfiche collections at more than 700 locations. Documents can also be ordered through the ERIC Document Reproduction Service: (800) 443-3742. For more information contact the ERIC Clearinghouse on Teacher Education, One Dupont Circle, NW, Suite 610, Washington, DC 20036-1186, (202) 293-2450; or (800) USE-ERIC.

Alabama Department of Public Health. (1990). *Health and safety caregivers survey; Health and safety parents survey; Health and safety day-care directors survey* (unpublished). Montgomery, AL: Author.

Resources for the Caregiver

American Academy of Pediatrics, Publications Department, Post Office Box 927, Elk Grove Village, IL 60009-0927. 1-800-433-9016. Ask your pediatrician if you might borrow copies of these publications and buy only the ones you wish for your program's reference library.

1. *Publications and Services Catalog*
2. *Health in Day Care—A Manual for Health Professionals*
3. *Pediatric Nutrition Handbook*
4. *Injury Control for Children and Youth*
5. *Report of the Committee on Infectious Diseases*

American Red Cross, *Child Care Course* (check with your local chapter)

Beneson, A. S. (Ed.). (1990). *Control of communicable diseases in man*, (15th edition). Washington, DC: American Public Health Association (1015 15th Street NW, 20005).

Brown, J. L., M.D. (1983). *How, when, and why to call your child's doctor.* Berkeley Books.

The Children's Hospital of Alabama, Office of Coordinator of Patient Education, 1600 7th Avenue S, Birmingham, AL 35233. (205) 939-9377. (Information handouts relating to health and safety and common childhood illnesses.)

Kendrick, A. S., Kaufman, R., & Messenger, K. P., (1988). *Healthy young children: A manual for programs.* Washington, DC: National Association for the Education of Young Children (1834 Connecticut Avenue, NW, Washington, DC 20009-5786). ED 303 264 (not available from EDRS).

XIII

Playground Management and Safety

Louis Bowers, Ph.D.

Introduction

The play of children is universally characterized by spontaneity, freedom, creativity, discovery, and joy. It can be observed that young preschool age children do not wait for a specified time to play, but rather initiate at every opportunity voluntary play activities as an important part of discovering and experiencing life. The play and developmental experiences of children form an integrated process through which the child's self is explored in relationship to the world.

Play takes many forms in making its contributions to the physical, psychological, and social development of children. It is most readily observable in the physical movement of children engaged in play. Young children both desire and need to involve their bodies in vigorous activities requiring forceful contraction of their muscles in order to promote growth and maintain the size and strength of both the muscular and skeletal systems. In addition, growing, developing children also require perceptual motor experiences for the achievement of control and coordination of movements of their bodies. Physical activity in which the child's body moves up, over, down, under, and through a variety of environmental challenges is both necessary for motor development and enjoyable to the young child. Thus, basic movements such as rolling, crawling, climbing, walking, jumping, leaping, running, and sliding are natural and important expressions in the natural play of children.

The play of children in its natural form is easily engaged in where there are accessible play spaces which have grass, hilly terrain, climbing trees, sand, water, and materials for building. However, with a continuing increase in human population these play spaces have and are being replaced by commercial buildings, parking lots, housing developments, and agriculture. In an effort to substitute for the vanishing natural play areas, parks, schoolgrounds, and backyards have been designated as the outdoor places in which children should play. Isolated pieces of traditional play equipment such as swings, seesaws, slides, merry-go-rounds, and monkey bars have been designed by adults to provide for play within these often barren, reclaimed play spaces.

Play equipment, if it is to serve the needs for play of children, must accommodate all the players. All the players include young preschool age

children with limited control of movements, children with varying degrees of physical and/or mental impairments, as well as able-bodied children with high levels of movement capabilities.

Adults routinely attribute the cause of playground-related accidents to inappropriate use of the play equipment by children. Could it be that the design of traditional play equipment is inappropriate for the natural play behavior of children?

The natural play of all young children, which is characterized by exploration, creativity, and gaining mastery over new physical challenges, is in direct conflict with the limited ways traditional play equipment can be used. Play equipment which allows only one child at a time to climb, slide, or swing and further demands that these activities be performed in a singular prescribed way severely limits the imaginative play of children.

Whenever the natural exploratory play behavior of children is in conflict with the single-standard design of the play equipment, the behavior is deemed inappropriate and often results in an accident. A National Electronic Injury Surveillance System (NEISS) report (1990) estimated that during the year 1988, 202,346 children in the United States received hospital emergency room treatment for injuries related to playground equipment.

In order to describe the type, location, and condition of playground equipment in preschool centers in the United States, a national study of preschool center playgrounds was conducted by the American Association for Leisure and Recreation Committee on Play of the American Alliance of Health, Physical Education, Recreation and Dance. The study included a survey of 349 randomly selected preschool playgrounds in 31 states which provided information about 2,447 play structures; 2,783 sets of portable play materials; and 2,919 other provisions on the playground (Frost, Bowers, & Wortham, 1990; Wortham & Frost, 1990).

The eight-page survey instrument was designed to secure information regarding: (a) the type and quantity of play structures and play materials, (b) location of each play structure on the playground, (c) the maintenance status of each play structure, (d) the height and configuration of each play structure, and (e) the type of surface material under each play structure. The survey provides information regarding broken or missing parts, sharp edges and projections, small openings within the structures, and other safety conditions. Conditions related to signs, trees, pathways, shade structures, wheel toys, manipulative materials, and garden areas were also covered. The findings of the survey for swing, sliding, and climbing structures and rotating, rocking, and seesaw equipment as well as sand and water play are as follows.

Swing Structures

The survey reported 554 swing structures at the preschool centers which constituted the highest percent (22.6 percent) of all play structures. Five percent of the swing seats on these structures were made of metal or wood despite the recommended safety standards of the Consumer Products Safety Commission which call for the replacement of metal or wood seats with softer material. Only 34 percent of the centers had smaller swing structures designed for preschool children, and 17 percent had appropriate-size swing seats for use by preschool age children. Perhaps of greater concern for the safety of children using the

swings was the finding that only 11 percent of the swing structures had a surrounding barrier to prevent children from running in front of moving swings and 21 percent of the structures had sharp corners, edges, and projections. While the average number of reported concrete footings per preschool center was one per preschool, the potential hazard posed by exposed concrete footings makes even one exposed footing cause for concern. Of the 202,346 playground-related injuries reported by NEISS in 1988, 76,089 were related to the use of swings. Fortunately only 33 percent of these injuries were to children 0-4 years of age.

Sliding Structures

The 531 sliding structures ranked second in prevalence at the preschool centers (21.7 percent of play equipment). Missing or broken parts were found on 6 percent of the slides, and sharp corners, edges, or projections were reported on 18 percent of the slides. Fortunately, the average vertical height of 531 slides surveyed was 5 feet 5 inches as compared to the higher sliding structures found in an earlier national study of elementary school playground equipment conducted by the AAHPERD Committee on Play (Bruya & Langendorfer, 1988). However, the danger associated with the height of sliding structures reported in the preschool centers is magnified by the finding that the concrete, asphalt, clay, and packed dirt which constitute 20 percent of the ground covering under the slides are unacceptable. The 1988 NEISS Injury Report indicated 42,806 injuries associated with slides and 48 percent of these injuries involved children ages 0-4 years.

Climbing Structures

The survey reported 1,046 separate climbing structures which was 46 percent of the total number of play structures at preschool centers included in the study. Unfortunately, an average of 3 climbing structures per preschool center (10 percent) were found to have open holes at the end of pipes forming the structure. Small openings where body parts could be entrapped were present on 44 percent of the structures. Twenty-four percent of the climbing structures were 7-feet or higher, and only 61 percent of the structures had guard rails around the highest platforms. The opportunity for a preschool age child to fall from a 7-foot or higher height combined with the finding that 23 percent of the ground covering was concrete, asphalt, gravel, and other unacceptable materials is of grave concern. Since 57,217 injuries in the 1988 NEISS Report were related to children utilizing climbing equipment, the above findings of unsafe conditions of climbing equipment must be improved. Fortunately only 18.7 percent of these injuries were to children 0-4 years old.

Rotating Equipment

While only 72 merry-go-rounds (2.92 percent of all playground equipment reported) were found, the fact that 16 percent of the merry-go-rounds had an opening between the rotating post and the outer perimeter is alarming. Further, the finding that 13 percent had either open gear boxes or the potential for shearing action underneath and 14 percent had sharp edges and protrusions makes this play equipment very questionable for inclusion on preschool center playgrounds. The use of concrete, asphalt, stone, and brick under and around

6 percent of the merry-go-rounds further adds to the existing hazards of the equipment. The 1988 NEISS Report did not specify injuries occurring on rotating equipment, but perhaps are included within the 16,548 injuries related to "other equipment."

Rocking Equipment

Individual rocking structures (172) constituted 7 percent of all play equipment reported in the study. On the positive side, 76 percent of the rocking structures had 3-inch-long hand holds, and 59 percent had 11-inch foot rests. On the other hand, 17 percent had sharp edges and projections, and on 47 percent, spring action pinching was possible. Rocking equipment also was not included in the 1988 NEISS Report on playground-related injuries.

Seesaw Equipment

Only 76 seesaw structures, which constituted 3 percent of all play equipment, were found in the preschool survey. Although 68 percent of the seesaws had 3-inch-long hand holds and 19 percent had cushioned impacts for seat landing; 40 percent had internal moving parts accessible to fingers, and short corners and projections were found on 26 percent of the seesaw structures. These last two negative features, plus the further finding that asphalt, concrete, and stone represented 16.5 percent of the ground covering under seesaws, would make seesaws an undesirable play structure, especially for preschool age children. This concern is borne out by the reported 9,686 injuries in the 1988 NEISS Report which were related to seesaw equipment. Thirty-one percent of these injuries involved children 0-4 years old.

Sand Play Areas

There were 176 designated sand play areas reported, which represented nearly 10 percent of all play structures. Thirty percent of the sand play areas were elevated, and 18 percent were covered or located so as to exclude animals. Eighty-one percent of the sand play areas were clean and free of debris. The developmental benefits of children playing with sand far outweigh specific safety concerns, which are minor when compared to play structures.

Water Play Areas

Only 100 water play areas (3.59 percent of all play equipment) were reported in the survey. Forty-five percent were elevated, fenced, and gated, and 52 percent were clear and free of debris. The 5 1/2 inch average water depth in the water play areas calls for close supervision of preschool age children.

Portable Play Materials

In the category of portable play materials, the survey reported that in 51 percent of the preschool centers there were tools and buckets available; 54 percent had balls and other sporting equipment; 56 percent had trucks, cars, and other small toys; and 55 percent had riding wheel toys available. However, there were wooden building blocks found outdoors in only 19 percent of the preschool centers and virtually no signs, tree houses, or drinking fountains near playground equipment. When one considers the many creative activities which

preschoolers can and should be engaged in, the lack of portable play materials in nearly half of the preschool centers surveyed is a sad commentary.

Quality Playground and Safety Principles

To establish quality preschool playgrounds or to help make preschool playgrounds better and safer for children, the following principles of design, maintenance, and supervision are suggested:

Provide Accessibility

Accessibility is being able to get up to and on and off equipment easily. Accessibility is important not only for handicapped children, but for young children and other players as well. Playground designs must take into account the way children play, so that children can move easily from one play activity to another. Injuries often occur when children who are too impatient to wait their turn look for unsafe paths to their destination. Equipment should provide several routes of varying degrees of difficulty. For example, children should have a choice between going up an easy ramp, climbing steps, or making their way up a more challenging incline or a net ladder. Ramps, inclines, and climbing nets each should be wide enough to allow several children to play on them at the same time. A slide should also be wide enough for several children to use it together. The principle here is to give children accessible space in which to play together with varying degrees of challenge so as to avoid waiting in line.

Avoid Steep Slopes

Ramps, slides, or climbing nets are important play components, but they should not be installed at angles of greater than 45 degrees and preferably closer to 35 degrees. On a slope below 45 degrees, a child's weight is centered forward so that a misplaced step will result in the child's falling forward in a way that can be controlled. The steeper the slope, the greater the risk a child will fall backward to the ground and be injured.

Limit Distance of Falls to 18 Inches

A play structure should follow a multilevel design which consists of a series of low to high platforms. The distance between levels can range from 12 inches to 24 inches, depending on the age of the children using the equipment. An 18-inch height between levels is both safe for preschool age children and presents a challenge for older children. The goal: a reasonable height to climb, but a minimal distance to fall. Don't expect siderails, which are recommended by the Consumer Products Safety Commission for all play structures above 30 inches, to provide the additional protection on high platforms, because they simply add to the height that children can climb. If a play structure is designed properly, every preschool child should be able to climb to the highest point, but no child, even though he or she may be 6 feet from the ground, should be able to fall more than 18 inches to the next platform.

Re-evaluate Risky Equipment

Many playground injuries are associated with equipment that moves children and generates force. Swings, merry-go-rounds, and seesaws are examples of this type of equipment. Once a child or her playmates get the play equipment moving, they cannot control the momentum that has been generated. That's why children are struck by swings or seesaws and fall off merry-go-rounds as they are pushed by others. Safe use of these playground standbys, requires additional attention and supervision. It's also a good idea to install a fence or other barrier to keep children from running in front of swings and to encase the moving parts of a merry-go-round or seesaw to protect exploring fingers.

Provide Soft Ground Covering

Ten inches of loose sand or mulch under play structures is needed to cushion falls from several feet. The depth and resiliency of the ground cover needed will depend on the potential height of a fall from equipment and the shock absorption quality of the material used. Wet sand provides far less cushioning for landing than dry sand, and packed mulch provides less absorption than loose mulch. Various types of rubberized surfaces provide good resiliency, but are quite expensive. Ground cover is very important because, although it will not prevent a fall, it can certainly reduce the impact of any fall.

Match Size of Equipment to Ages

Playground equipment should be designed appropriately for the age group using it. A 3- or 4-year-old should not have to climb up a 13-foot vertical ladder to reach a slide, for example. And, on the other hand, small, unchallenging structures might encourage older students to engage in inappropriate experimentation, such as balancing on narrow siderail beams or atop posts. Young children need play structures which match their size, physical strength, and movement capabilities.

Ensure Safe Clearances

No child should come off a slide, swing, or merry-go-round and run into another piece of equipment or a tree. Place each play structure at least 20 feet away from trees, fences, or other playground structures so children have a chance to react safely as they make a transition from one play activity to another. Interconnected play structures with strategically placed play components eliminates the problem of isolated play structures being too close to each other.

Provide Partially Enclosed Spaces

Children enjoy enclosed spaces for quiet and dramatic play. Providing partially enclosed tube slides or tunnels makes playground equipment more versatile. Of course, enclosures must be large enough for children and adults to move freely through them and to permit adults to supervise visually.

Use Interconnective Play Components

Providing variations in the size, color, texture, and, most important, configuration of play structures promotes accessibility, experimentation, and

varied play for children. An interconnective play structure is one that connects ramps, climbing nets, stairs, slides, platforms, and pathways to provide easy movement throughout the play structure. Interconnective structures provide more opportunities for play in less space and with greater ease of supervision.

Minimize Exposure to Sun

Installing playground equipment under the shade of trees or nearby buildings encourages children to play longer and more actively. Sunshine is beneficial, but having some shade available reduces the risk of sunburn or burns to the skin caused by metal slides becoming hot. The use of fiberglass or polyethylene for sliding surfaces eliminates both burns in summer and body parts freezing to play equipment in winter.

Use Good Quality Materials

Safe playground equipment requires strong, durable, and nontoxic materials. Structures made of metal, wood, and/or plastic are all acceptable if they are constructed and installed properly. The equipment must be structurally sound: It must be able to support the weight of many children and adults at the same time. All edges must be rounded and smooth and the structure free of cracks and splinters at all times.

Inspect Equipment Regularly

Regular inspections are essential to ensure the safety of playground equipment. Ask teachers to keep their eyes open for obvious dangers of broken glass and sharp rocks, but also for loose or exposed nuts and bolts or broken steps, during their regular playground duties. In addition, have trained maintenance personnel regularly inspect the structural integrity of playground equipment. Damaged areas should be identified immediately as being off limits until repairs are made. Identification of a problem followed quickly by appropriate repair is crucial to the maintenance of a safe play environment.

Increase Supervision

Teachers and playground aides perform a vital role in playground safety. To prevent reckless play, students must clearly understand the rules of safe play. All rules must be enforced by adults trained in supervision. A rule which is not enforced is not a rule. Children are not self-destructive, but sometimes need the guidance of adults to play safely.

Summary

Implementation of these design, maintenance, and supervision recommendations will result in a safer, more enjoyable, and developmentally sound play environment for children. To put it another way, playground equipment should be designed to make it difficult for children to hurt themselves, but easy for them to have fun. Young people need and deserve the best quality play experience as they grow and develop. The guidelines provided in this chapter can help meet that challenge. Young children are special and deserve our very best.

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XIV

Injury Prevention in the Child Care Setting

Albert Chang, MD, MPH

Introduction

Unintentional injuries, also termed accidents, are the leading cause of death in young children in the United States. In 1986, 2,814 children ages 0-4 years died from injuries; these represented 46 percent of all deaths in this age group. Many thousands more are severely disabled. For every injury-related death, an additional 45 children require hospitalization; 1,300 children are seen and treated in hospital emergency rooms, and 2,600 are given some treatment at home.

As more children are enrolled in out-of-home child care programs, there is a greater awareness of the injury potential in that setting. Although young children have been enrolled in nursery schools and day-care centers for over a century, reports of injuries sustained in these settings were first reported in the literature only 25 years ago (Bitner & DeLissovoy, 1964; Federer & Dave, 1964). These were mainly descriptive studies which tabulated the number of children who sustained lacerations (cuts), abrasions (scrapes), and contusions (bumps) in a single nursery school setting over a specific period of time (usually a year). A more recent review of several hundred injury reports in a university-sponsored day-care center showed that only 1 percent of these injury episodes required referral to a physician. The authors concluded that "Despite numerous accidents, serious injury was very rare, and day care, indeed, seemed safe" (Solomons, Lakin, Snider, & Paredes-Rojas, 1982). Another study which surveyed a large number of child care programs found comparable incidence rates between injuries in these settings and the home (Landman & Landman, 1987). An analysis of 2 years of injury reports filed in a large system of day-care centers in Los Angeles found that younger boys (2-3 years) showed the highest injury rate and older girls (4-5 years) showed the lowest (Chang, Lugg, & Nebedum, 1989). The overall incidence rate was 19.7 injuries per 1,000 child-years. The majority of the injuries were minor, and medical attention was recommended in only 12.8 percent of the injury episodes. The highest incidence occurred in the late morning period. A consumer product was involved in 53.7 percent of the incidents. Three out of 4 injuries were considered preventable by training and/or education, or by one or more of the Haddon injury prevention strategies (see Table 1 for an example).

Table 1
Haddon's Injury Reduction Strategy in Prevention of Scalds in Children

Prevention Strategy	Intervention	Intervention type
Prevent the creation of the hazard	Do not cook food (not practical). Eliminate hot water (not practical).	Education/behavior change
Reduce the amount of the hazard brought into being.	Lower temperature of water heaters. Manufacture hot water only to safe temperatures.	Education/behavior change, engineering/technology, and legislation/enforcement
Prevent the release of the hazard	Create nontip pots, short-cord appliances	Engineering/technology
	Install small spouts for hot water.	Engineering/technology
Separate the hazard from that which is to be protected by time and space.	Cook when children are out of kitchen. Do not use hot liquids near children.	Education/behavior change
Separate the hazard from that which is to be protected by a physical barrier.	Use gates to kitchen to prevent entry. Use counter guards and pot handles that prevent spills	Education/behavior change and engineering/technology
Modify relevant basic qualities of the hazard.	Manufacture appliances that are low conductors of heat.	Engineering/technology
Make what is to be protected resistant.	Have children wear protective clothing (not practical).	Education/behavior change and engineering/technology
Begin to counter damage done by the hazard.	Apply cold water to burns.	Education/behavior change
Stabilize, repair, and rehabilitate the object of the damage.	Develop a regional treatment system (prehospital, burn center, and rehabilitation care).	Engineering/technology and legislation/enforcement

A prospective study involving 71 day-care centers in Atlanta reported an incidence rate of 1.77 injuries per 100,000 child-hours in day care (Sacks, Smith, Kaplan, et al., 1989). Almost half of the injuries occurred in the playground. Because a third of all injuries resulted from falls in the playground, the authors recommended the installation of impact-absorbing surfaces under the playground equipment.

The question will naturally arise: do injuries occur more frequently and with greater severity in child-care centers as compared to home care? A Swedish study showed very comparable incidence rates, 1.05 per 100,000 child-hours for day-care centers, and 1.12 per 100,000 child-hours for the home (Jacobsson & Schelp, 1987). A Seattle study which monitored injuries in children served by a health maintenance organization actually showed a lower incidence of injuries in child care centers, 2.5 per 100,000 child-hours, compared to 4.9 per 100,000 child-hours for children cared for at home (Rivara, DiGuiseppi, Thompson et al., 1989). As others have noted, the results of the above study should not be generalized to the heterogeneous child population that is enrolled in child care (Gielen, Smith, Chaulk et al., 1990). Clearly more research is needed in different child care settings and geographic locations, but thus far there is no evidence that children in child care sustain more injuries or more severe injuries than children cared for at home.

Establishing an Injury Prevention Program in the Child Care Center

In light of the above considerations, every organized program of child care should establish a written plan for injury prevention. The plan should include the following components.

- *Develop safety guidelines.* Describe the safety guidelines to be followed at the center. All staff members at the time of employment should be given a copy of the safety plan, which should be reviewed with each caregiver to ensure that policies are understood and followed. The written plan should be on file at the center for review by staff, parents, and official agencies.
- *Set up an injury monitoring and logging system.* When an injury occurs in the child care program that requires first aid or medical attention for a child or an adult, program staff should complete a report form that provides the following information: name, sex, and age of the injured; date and time of the injury; location where the injury took place; a description of how the injury occurred; part of the body involved; description of any consumer product involved; name of staff member responsible for the care of the injured at the time of the injury; actions taken on behalf of the injured following the injury; and name of person who completed the report (see Table 2). The injury report form should be completed in triplicate. A copy should be given to the child's parent or legal guardian. The second copy should be kept in the child's folder at the program site, and the third copy should be kept in a chronologically filed injury log. This last copy should be kept in the program site for at

least the period required by the state's statute of limitations. This report form should also be made available to health providers and other appropriate health agencies for review and analysis. The injury log should be reviewed by program staff at least semiannually and inspected by licensing staff and health consultants at least annually.

Table 2
Injury Report Form

Name: _____ Sex: _____ Age: _____
Date when injury occurred: _____
Time when injury occurred: _____
Location where injury occurred: _____
Description of how injury occurred: _____
Description of part of the body involved: _____
Name of consumer produced involved (if any): _____
Action taken on behalf of the injured: _____
Was parent/guardian specifically advised of injury? _____
Was child or parent specifically advised to obtain medical attention? _____
Name of individuals involved in supervision at the time of injury: _____
Name of person completing this report form: _____

- *Train caregivers in first aid, choking prevention, and rescue breathing.* Whenever children are present, there should be at least one caregiver on site with training in first aid, choking prevention, and rescue breathing. This applies whether the activity is taking place in the child care program or elsewhere (e.g. field trip, nearby playground).
- *Establish a program of continuing education addressing injury prevention and safety instruction.* The knowledge and skills of the staff must be periodically reinforced in order to maintain adequate safety measures. In addition, new information must be shared with the entire staff. Continuing education workshops in injury prevention should take place at least annually.
- *Conduct a periodic safety inspection of the premises at least monthly, using an easy checklist.* This should be the formal part of a safety inspection, and written reports should be maintained by the caregiver. Potential hazards must be corrected immediately and when this is not possible, the hazards should be made inaccessible to the children. A good source of such a checklist is Kendrick, Kaufman, & Messenger (1988).
- *Perform other injury prevention activities that might be required, such as tornado drills or earthquake drills.* The frequency of these exercises should be determined by the geographical location of the program. The drills should be carried out at least annually.

Aspiration and Suffocation Injuries

Epidemiology: Although the incidence of aspiration injuries (blockage of the larynx, trachea, or bronchi) has decreased, they remain a serious danger to young children. It is estimated that about 73 children (birth to 9 years) die from the injury every year. The association of this injury with the following behaviors of children should be borne in mind: rapid eating, improper chewing, laughing or running with food in the mouth, or holding a foreign object in the mouth. Coins, small toy particles, and food products, particularly round foods (hot dogs, grapes, peanuts, raw carrots, and candy), head the list of causes. Other potential causes are uninflated balloons, aspirin tablets, pop tops from beverage cans, and baby powder. The age of greatest risk is between birth and 4 years, with the peak at 12 months.

Prevention Measures:

- Young children who are just learning to feed themselves should be supervised by a caregiver who is seated at the same table or adjacent to the child's feeding chair. Children's food should be served on plates or other sanitary holders. Round, firm foods should not be offered to young children (e.g. hot dogs, grapes, hard candy, peanuts and other nuts, and popcorn). For infants, foods should be cut up in small pieces no larger than 1/4-inch cubes; for toddlers, foods should be cut in small pieces no larger than 1/2-inch cubes. A child should be encouraged to eat but not forced to do so. Food should never be used as a reward or punishment.
- Children should not be given coins or small objects to play with and should be taught not to hold foreign objects in their mouths. Uninflated balloons or broken pieces of balloons should be kept away from young children. Thin plastic bags, (i. e., intended for storage, trash, diaper disposal), should be stored out of reach of children. By government regulation, the small parts of toys must meet the following standard: they must be larger than 1.25 inches in diameter, and they also must be too large to fit into a truncated cylinder 2.25 inches long.
- Cribs should be made of wood, metal, or approved plastic and have secure latching devices. Cribs should have slats spaced no more than 2 3/8 inches apart, with a mattress fitted so that no more than 1 inch of space is between the mattress and the cribside. The minimum height from the top of the mattress to the top of the crib rail should be 36 inches. Drop-side latches should securely hold sides in the raised position and not be reachable by the child in the crib. Cribs should not be used with the drop-side down. There should be no corner post extensions (over 5/8 inch) or cut-outs in the headboards on the crib.

Poisonings

Epidemiology: The American Association of Poison Control Centers reported a total of 1,368,748 human poisoning incidents in 1988. Since the centers do not cover the entire population of the United States, it is likely that the total number of poisoning incidents is greater than 2 million. Two thirds of these incidents involved preschool age children. Nine out of 10 cases

occurred in the home. In 1985 there were 80 fatal cases of poisoning in young children. For every death, 80,000-90,000 nonfatal cases are seen in emergency rooms, and 20,000 individuals are hospitalized.

Prevention Measures:

- All toxic substances (e.g., kerosene, lighter fluid, gasoline) should be stored out of reach of children in a separate room or building.
- All medicines, refrigerated or at room temperature, should be kept in an orderly fashion, stored away from food and at the proper temperatures, and inaccessible to children. Medicines should have child-protective caps and should also be kept under lock and key.
- Plants that are potentially harmful should be kept out of the reach of children. Art and craft materials that are labeled as "toxic" should not be used by children. Consultation with local or national safety organizations should take place when there is uncertainty about the safety of these materials. Children and caregivers shall be separated from home areas that have been treated with pesticide, herbicide, or fungicide or other materials that are potentially toxic to human beings.
- The poison control center and or family physician should be called in case of any poisoning emergency. Information on the child's age, substance ingested, estimated amount taken, and condition of the child should be made available to the poison control center or physician. Syrup of ipecac should be available for administration as a vomiting agent only under the direction of the poison control center or physician.

Motor Vehicle Related Injuries

Epidemiology: Motor vehicle related injuries involving passengers, pedestrians, and bicyclists represent the leading cause of death in young children. In 1988, there were a total of 49,000 fatalities, and 1.8 million disabling injuries. Seven percent of these fatalities occurred in children from birth to 14 years of age. In 1985 there were 1,610 passenger deaths; 1,161 pedestrian deaths; and 353 bicycle deaths in children under 15 years of age.

Prevention Measures:

- A caregiver who provides transportation for children should operate a vehicle that is licensed according to the state. The vehicle should also be equipped with a first aid kit and emergency identification for all children being transported. Vehicles should have air conditioning if the ambient temperature exceeds 90°F, and heating if the temperature drops below 50°F. A back-up vehicle should always be available and should be dispatched immediately in case of an emergency. Vehicles should be inspected regularly, at least weekly, to assure that signs, lights, and other safety features of the vehicle are operating properly.
- The vehicle should be driven by a person who holds a current state driver's license that authorizes the driver to operate the vehicle driven. The criminal record file in the state and the child abuse registry in the state should be checked. No person recorded in the state child abuse registry as having abused children or with a criminal record of crimes of violence or sexual molestation should be allowed to drive children. All drivers should be required to receive instructions in child passenger safety precautions, including use of safety restraints, handling of

emergency situations, and supervision responsibilities as documented in the personnel record of any paid staff or volunteer who provides transportation for the program. All drivers, passenger monitors, or assistants should be trained in basic first aid, including choking prevention and rescue breathing. There should be no smoking in the vehicles whenever children are present. Drivers should not have used drugs that might impair their driving skills or alcohol for 12 hours prior to transporting the children.

- Staff:child ratios established for out of home child care must be maintained during all transportation provided or arranged by the program. The driver should not be counted in the ratio. No child should be left unattended in a vehicle.
- A child should be transported only if the child is fastened in an approved safety seat, seat belt, or harness appropriate to the child's height and weight, and the restraint is installed and used in accordance with the manufacturer's instructions. Each child must have his or her own individual seat belt or safety seat. An approved restraint is one that meets federal motor vehicle safety standards.
- In case of an emergency, all drivers should know and keep in the vehicle the quickest routes to the nearest hospital at any point on their route.
- Children should not be transported more than 1 hour per one-way trip unless there are no alternative routes or modes of transportation available. In these cases, children should be provided with appropriate rest stops.
- A plan should be developed for safe pick-up and drop-off points and pedestrian crosswalks in the vicinity of the child care program. This plan should be provided to staff and parents.
- Children should be instructed in safe transportation conduct for their age and stage of development, both as passengers and pedestrians. Children using tricycles and other fast moving wheeled vehicles should use safety helmets bearing the Snell or ANSI approval label.
- When the vehicle has arrived at the destination of the field trip, the engine should be turned off when children are leaving or getting in the vehicle.

Falls

Epidemiology: Falls represent the second leading cause of fatal nonintentional deaths for all ages. This type of injury represents a great danger to the elderly when they fall in the home. Falls, however, are also common in young children, although these are seldom fatal. Infants were involved in over 86,000 emergency room treated injuries in 1987. Toddlers also fall from playground equipment, furniture, stairs, windows, and motor vehicles.

Prevention Measures:

- The prevention of falls from playground equipment is extensively discussed in Chapter XIII.
- Parents should be instructed to prevent hazards that result in falls. For example, supervision of young children should be constant in order to prevent falls from changing tables, high chairs, cribs and beds, windows, and stairs. Parents should install safety gates with child-proof

latches at the top and bottoms of all stairwells. If children live above the first floor, windows should have metal guards. Changing tables and high chairs should have a safety strap which when used can provide additional protection against falls.

- The use of safety belts or safety seats can also prevent falls when children ride in motor vehicles. Children should not be allowed to ride in open truck beds.
- Parents should be advised not to use child walkers because these have been frequently involved in falls.

Burns and Scalds

Epidemiology: Fire and burn injuries caused 5,000 deaths in 1988. Twenty percent of fatal burn victims were preschool children. Three out of 4 deaths occur in house fires, with the elderly and young children having the greatest risk. Other common causes of burns in children involve wood stoves, space heaters, electrical appliances, and hot liquids, which can cause scalds.

Prevention Measures:

- There should be a report of testing and maintenance of fire extinguishers that is available for inspection. Fire extinguishers of the A-B-C type should be installed and maintained in good working operation. The size and number of fire extinguishers required should be determined by the fire inspector. The caregiver staff should demonstrate the ability to locate and operate the fire extinguishers at least every 6 months.
- A fire evacuation procedure should be approved by the fire inspector and should be posted in each room of the child care program. A record of evacuation drills practiced at least monthly should be kept on file.
- Matches and lighters should be inaccessible to children. Portable heaters, open flames, kerosene or gas stoves, and space heaters should be prohibited. Electric heaters may be used but only if they are UL approved, have protective covering, and are placed at least 3 feet away from curtains, papers, and furniture. They should be kept out of contact with children. These heaters and fireplaces should be screened securely or equipped with protective guards while in use. If fireplaces are used, the program should provide evidence of cleaning the chimney at least once a year, or as frequently as necessary to prevent excessive buildup of combustibles. Children should be protected from sources of heat, such as fireplaces and wall or floor heaters, by barriers such as guards or other devices.
- Electrical outlets and fixtures should be installed properly, be maintained in safe condition and repair, and be connected to the source of electricity in a manner that meets local electrical codes as certified by an electrical code inspector. Electrical outlets accessible to the children should be covered with child resistant covers or be of the child-proof type. No electrical device or apparatus accessible to children should be located so that it could be simultaneously plugged into an electrical outlet and in contact with a water source such as a sink, tub, shower area, or swimming pool. Electrical cords (extension and appliance) should not be frayed nor overloaded, and should be placed beyond the children's reach.

- Hot water should be controlled so that its discharge temperature does not exceed 110°F. Hot foods and beverages should be placed out of the reach of young children. Caregivers should not consume hot liquids when holding or working with children. Hot liquids should not be placed at the edge of a counter or table, or on a tablecloth which could be yanked down while holding or working with a child. Pot handles should be positioned toward the back of the stove.
- For minor burns, cool water should be applied to the burn area immediately. The area should be covered with a loose bandage or clean cloth. Children should be instructed to cover, drop, and roll if their garments catch fire. Children should also be instructed to crawl under smoke when evacuating a fire area.

Drownings

Epidemiology: In 1988, there were 5,000 drownings, about 26 percent involving children under age 14. Four out of five residential pool drownings involved preschool age children. The majority of pool drownings occur during a brief lapse of supervision when the parent or caregiver is distracted by phone calls or other chores.

Prevention Measures:

- Children should be constantly supervised when playing near any body of water, including swimming pools, hot tubs, pails, sinks, or toilets. Staff should prohibit dangerous behavior. Children should not be permitted to push or hold each other under water or to run at the pool side. Adult:child ratios should be maintained as shown in Table 3. Children should be instructed to call for help only in a genuine emergency. Because of possible drowning hazard in the bathroom, young children under 3 years should be supervised by a caregiver.
- At least one of the staff caregivers should be trained in life saving, cardiopulmonary resuscitation and basic water safety. Written verification of such training should be kept on file.
- Tricycles, wagons, and other nonwater toys should not be permitted on the pool deck. Use of flotation devices should be prohibited.
- All bodies of water, such as swimming pools, ditches, and fish ponds, should be enclosed with a fence which is at least 5 feet high and comes within 3 1/2 inches of the ground. Openings in the fence should be no greater than 3 1/2 inches to prevent entrapment. The fence should be constructed in a manner which discourages climbing. Entrance and exit areas should have self-closing, self-locking gates. The child care building should not constitute one side of the fence unless there are no openings in the wall. Sensors or remote monitors should not be used in place of a fence or the proper supervision. Child proof covers may substitute for fences as a safety measure if they meet or exceed the standards of the American Society for Testing and Materials (ASTM).

Table 3
Recommended Adult:Child Ratios for Swimming Activities in the Child-Care Setting

Similar Developmental Level	Adults	Children
Infants	1	1
Toddlers	1	2
Preschoolers	1	4
School-Age Children	1	6
Mixed Developmental Level	**Adults**	**Children**
Infants/Toddlers	1	2
Infants/Toddlers/Preschoolers	1	3
Infants/Toddlers/Preschoolers School-Age Children	1	3
Infants/Toddlers/School-Age Children	1	4
Preschoolers/School-Age Children	1	5

Source: American Public Health Association (In press).

- When not in use, above-ground pools should be covered with a secured cover that does not permit rainwater to accumulate. Each swimming pool should be provided with a ring buoy and cope and/or a throwing line and a shepherd's hook. Swimming pools or wading pools should be constructed, maintained, and used in accordance with applicable state or local regulations and should be regularly inspected by local health authorities to assure compliance. Deck areas adjacent to the swimming pool should be constructed of or covered with a nonskid surface.
- Legible safety rules for the use of swimming and wading pools should be posted in a conspicuous location, and should be read and reviewed monthly by each staff member responsible for the supervision of children. An emergency plan should be developed and reviewed monthly.
- Small, portable wading pools should not be permitted. In addition to safety hazards, these represent a potential risk for the transmission of infectious diseases. Bathtubs, water tables, buckets, or pails of water should be emptied immediately after use.

Summary

A quality child care program must ensure the safety of the children in attendance and the caregivers working on the premises. Recent studies do not indicate that children and caregivers are exposed to unduly high risks for injury and disability. Every effort must be made, nevertheless, to reduce the potential for injury in the child care setting.

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Index

Academic readiness, 4, 11, 21, 34, 127
Accessibility (see also Mainstreaming), 161
Activities of daily living, 60, 111
Aggression, 38
American Academy of Pediatrics, 36, 128, 151
American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD), 17, 106,158
American Association for Leisure and Recreation, 158
American Cancer Society, 60
American Heart Association, 60
American Red Cross, 149, 151
Arts, 12, 13, 44-45, 84
Assessment, approaches, 92, 94-100
Assessment, child, 11, 75, 90-93, 101-103, 106, 109-121
Association for Childhood Education International (ACEI), 10, 17
Association for Supervision and Curriculum Development (ASCD), 17

Behavior change, 58, 63
Burns, 174-175

Cardiovascular disease, 34
Caregiver education (see also Teacher education), 147-151
Children's Defense Fund, 4
Cognition, 4, 34, 44, 60, 89, 127
Competition, 38, 53
Consumer Product Safety Commission, 158, 161
Creativity, 45-46, 81
Cultural awareness, 37, 52-53, 64
Curriculum, costs, 62
Curriculum, preschool, 12, 61

Dance, 13, 43-55
Day care, need, 4
Dental health, 111, 120
Development, 21
Developmental stages, 22-23, 95-99
Developmental task analysis, 28
Developmentally appropriate practice, 3, 11, 12, 23-25, 51, 52, 62, 162
Developmentally delayed children, 71, 77-78, 93
Disabled children, 10, 35, 36, 44, 45, 71, 77
Discipline, 116-117
Drownings, 175

Emotional development, 34, 45, 48, 60, 113-115
Equipment, play, 28-29, 157-158
Evaluation, program, 61, 75, 139

Falls, 159, 173-174
Federal legislation, 10, 71-76, 127
Fine motor skills, 22, 60, 111
Fire extinguishers, 174
Fundamental motor skills, 24-29, 48, 83-84, 89, 92, 95-100, 127-28, 157

Games, 38, 92
Gifted children, 73
Goal setting, 37, 62, 91, 135
Gross motor skills, 22, 60, 91, 130
Growth, 23, 111, 119

Head Start, 10, 17, 60, 125
Health, children's, 3, 33, 145-146, 152-154
Health concerns, 145-147
Health education, 57-67, 135, 147-148
Health education, content, 58-60
Health-related fitness (see also Physical fitness), 28, 91, 100
Heat illness, 35-36, 149, 152-153
Homeless, 5

Illness Observation Sheet, 150
Illness recognition, 35, 149, 152
Immunization, 5, 110, 112, 148
Individual Family Service Plan (IFSP), 72, 75
Infant mortality, U.S., 5
Injury prevention, 35, 115-116, 157-163, 167-178
Injury surveillance, 158, 169

Language development, 46, 60, 84-85, 112, 127
Language-Arts-Movement Programming (LAMP), 84
Low-income families, 5, 10, 109, 136

Mainstreaming (see also Accessibility), 73, 74, 79
Maturation, 22, 94, 130
Motor development, 4, 21, 83-84
Motor programs, 91
Motor vehicles, 146, 172-173
Movement education, 12, 25-26, 81, 90

National Association for State Boards of Education (NASBE), 17
National Association for the Education of Young Children (NAEYC), 3, 17
National Education Association (NEA), 9, 11, 17
National Goals for Education, 11
Newsletters, 136
Nutrition, 4, 34, 119-120, 130, 171

Obesity, 34, 36, 44

Parental involvement, 4, 11, 64-65, 72, 103, 125-130, 143-144
Parental involvement, techniques, 130-139
Perceptual-motor development, 26-27, 45
Physical education, 13, 23-24, 36-37, 83, 128, 135
Physical examinations, 35, 110
Physical fitness (see also Health-related fitness), 24-26, 33, 130
Physical fitness, benefits, 34
Physical fitness tests, 100-101
Play, 11, 36, 82, 83, 113, 117-118, 157
Playgrounds, 157-165, 169
Poisoning, 171-172
Policies, preschool programs, 35, 129, 133-134, 148, 169
Public Law *94-142*, 71, 127
Public Law *99-457*, 71, 77, 109, 127

Reliability, test, 103
Reports, accident, 4, 170
Role models, 73, 147

Safety, 4, 47-48, 115-116, 157-165, 167-178
Self-efficacy, 63
Self-esteem, 43, 80
Sex education, 65
Sexuality, 113, 119
Sleep, 111, 118-119
Social development, 37, 60, 80, 113-115, 157
Southern Association on Children Under Six (SACUS), 10, 17
Spatial awareness, 24, 26, 45, 48-49
Special Olympics, 82
Sport skills, 25
Sports, 36, 82, 92

Teacher education (see also Caregiver education), 13-14, 60, 61, 74
Television viewing, 33, 117-118
Toilet training, 110-111, 114
Toys, 36, 47, 111, 118

United Nations Educational, Scientific and Cultural Organization (UNESCO), 10

Volunteers, 137

Water play, 28, 160, 175-176

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